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THE UNIVERSAL RELIGION.

We have already seen that the world was ready for Christ, that it was "the fulness of time" for him to come; it remains to ask, did he fulfil the required conditions; did he bring a Revelation and found a religion such as the world needed? Was He, in other words, the promised seed in whom all the nations of the earth should be blessed.

The Messiah, the anointed one, was to fulfil in his own person the threefold office of Prophet, Priest and King. As a Prophet, he was to teach the Will and Word of God, as a Priest to make atonement for sin, and as a King to rule in righteousness over willing subjects, and to set up a kingdom which should never be removed.

Owing to their political status the Jews at large fixed their minds solely on the glories of the kingdom and in their eager desire for an immediate deliverance from the Roman yoke they shut out of their view, and, contrary to their own Scriptures and the very terms of the covenant, excluded from all participation in its benefits the whole mass of mankind outside the Jewish pale. So inveterate was this error that it was long before Jewish Christians would admit that Gentile Christians stood on exactly the same ground before God as themselves. Their absolute equality was maintained by St. Paul the great apostle of the Gentiles with all

the ardour of his impetuous nature, and under God he saved Christianity from being smothered in the swathing bands of its Jewish cradle. The destruction of Jerusalem and the Temple with its sacrifices and priesthood and the consequent dispersion of the Christian Church completed its deliverance from that danger.

Had the Jews considered more deeply the meaning of their own history they might have avoided this capital error. For just as their fathers Abraham, Isaac, and Jacob and the rest "all died in faith, not having received the promises" in reference to the nation that was to be born from them and the possession of their inheritance, but each receiving in his lifetime a pledge of God's faithfulness for his own personal assurance, so in regard to the establishment of the Messiah's kingdom, they might have gathered that all that was involved in it could not be fulfilled in their own day. Sufficient for each generation if it has its own share, and by a good use of its present opportunities does its part towards the consummation of the Divine will which is being wrought out on earth for men and by men until the end come.

There was then nothing wanting in Jesus so far as he based his Messianic claims on the Holy Scriptures. Again and again did he appeal to them; yea more, he said, "Search the Scriptures for in them ye think ye have eternal life and they are they which testify of me." How often in the Gospels is it said "Now all this was done that the scriptures might be fulfilled." A comparison of the life of Christ with what was foretold of the Messiah in Moses, the Psalms, and the Prophets seems to leave no room for doubt in a candid mind that he was the promised deliverer—"The King of the Jews," albeit he was "*Jesus of Nazareth.*"

But it was not merely on these co-incidences of time and place that he relied in arguing with the Jews. It was rather on the evidence of his works and words combined with a life of spotless purity that he laid the stress of his claims. These were open to all and admitted really of no dispute, and were such as all men could appreciate. To men who are determined to cavil all proofs are alike vain, but they are left without excuse and their folly is manifest to all. We have a striking contrast brought out in the case of the blind man, (as ignorant probably as he was blind,) who was healed by Jesus, and the Pharisees who were so indignant when they heard of it. The account as given in John ix. is so absolutely artless and natural, and so perfect in itself that to attempt a summary is to spoil it. One remark only in passing. We are often

astonished at the ignorance or grieved at the wilful blindness of those who tell us that Jesus Christ never in so many words claimed to be the Son of God. How can any one dare to say so in face of John ix. 35-37 ?

And it avails not to try and explain such an expression away into a mere empty truism such as would apply to all men alike, for He was not like other men as a matter of fact, and his words and works prove Him to be the Son of God. Thus in speaking to his disciples of the way in which the Jews had treated him and would treat them, in John xv. 22. he says, "If I had not come and spoken unto them, they had not had sin: but now they have no cloke for their sin;" and again. "If I had not done among them the works which none other man did, they had not had sin,: but now they have both seen and hated both Me and my Father." Could words more plainly show the moral intention of his words and works, and the sin of refusing to accept the conclusion to which they naturally point? And this is the burden of his controversy with the Rabbis as recorded in John ch. v.—viii. Who among the sons of men save Jesus the Son of God has ever dared to put to his enemies this question. "Which of you convicteth me of sin?" What again could those words mean especially as addressed to Jews and spoken with unusual solemnity, "Verily, Verily, I say unto you, before Abraham was, I am." ?

Now, if the record that we have received of the words and works of Jesus Christ be true, their evidence to us is neither more nor less than to the men of his own time. St. John distinctly asserts the object of his Gospel as follows (xx. 31). "These are written that ye might believe that Jesus is the Christ, the Son of God; and that believing ye might have life through His name." But if with all this before us we do not believe, why is it? God knows; but Jesus said to the unbelievers of His day, "Ye will not come to me that ye might have life." There may be many reasons for the world's unbelief in Christ in spite of the convincing evidence of his words and works, but it is to be feared in most cases His explanation is only too true, "Ye *will* not come to me."

And this is true even of many who have and profess the highest reverence for the character of Christ Jesus, and who, unconsciously it may be, do dishonour God inasmuch as they dishonour His Son by refusing to Him that which He claimed, and which alone gives authority and vitality to His doctrine. He claimed to be the Son of God. He claimed to have come from God the Father to make

Him known to men as their Father. He claimed to be the only way for men to the Father. "I am the way, the truth, and the life, no man cometh unto the Father but by me."

Such absolute claims entirely consist with the idea of the Universal Kingdom which He came to establish, of which He should be King and the whole of mankind his subjects, drawn to Him by the most potent of all bands—Love. "God so loved the world that He gave His only begotten Son, that whosoever believeth in Him should not perish but have everlasting life." This is the Magna Charta of the world's liberties. Here is the platform of a Universal religion based on the Fatherhood of God and the brotherhood of men. The world had not heard anything like it before, and has heard nothing like it since.—"I if I be lifted up from the earth will draw all men unto me," is but the same truth put in terms of His own death. And that death with all that it means for a dying world has lost none of its attractiveness, none of its power. The Cross of Christ is still "the power of God and the wisdom of God," for it is the most wondrous exhibition the world has seen of pure love, and "love is stronger than death."

> "Love rules the court, the camp, the grove,
> And men below, and saints above;
> For love is heaven, and heaven is love."

The majority of the languages spoken on earth have been reduced to a written character solely with a view to the publication of this Gospel of love. The literature of the chief nations of the earth is saturated with its spirit, as is also their speech. And so far from its natural force abating in this "scientific" age, no less than four millions of copies of the Bible in whole or in parts were circulated throughout the world last year, while the recent revised version of the Bible in English, the fruit of some fifteen years' continued labour of the best scholars of the day, has caused an excitement quite unprecedented in the annals of literature. Last year a penny edition of the New Testament was issued in London and in less than nine months nearly one million copies had been sold! What would the literary world say had the book been Shakespeare instead of the New Testament of our Lord and Saviour Jesus Christ? But these signs and wonders of "the old, old story" pass by almost unheeded, while any "new thing" with its lying wonders is greedily devoured. Time, however, always vindicates truth and exposes falsehood. The Collapse of Koot Hoomi is now historical. The signs and wonders which were wrought have been exposed as

scarcely "pious frauds," and Theosophy which was to supersede the religion of Christ, "the wisdom of God," is now declared by its own advocates to be no religion at all! The Roman poet best expresses our thoughts on the whole matter:

"Parturiunt montes (the Himalayas) nascetur ridiculus mus."

The "fatherhood of God," and "brotherhood of men" are glibly used here in India on the lips of many who hardly consider what such words mean. Fortunately the words *Father* and *Mother* have such a definite and universal meaning that we are in no fear of ambiguity in using them. We see philosophy committing suicide in Plato's suggestion of the community of women in his ideal Republic, and the painful reflection is forced on us that the moral tone of Greece in its highest glory was in this essential on a par with the practices of only the most degraded savages who scarce are above the level of the beasts.

There was need of the re-assertion of the fundamental truth of the sanctity of marriage and of the family. By his life of submission in the quiet house at Nazareth no less than by his explicit declarations, Jesus Christ vindicated and upheld the honour of the mother the wife, and the sister. And it is a most telling argument for Christianity that wherever its influence spreads, women (who are the half of mankind, and Christians alone are wont to say *the better half*) are at once elevated to their proper level as helps meet for man, not slaves to his will.

Again, the idea that all men have an innate right to personal freedom by the very gift of life from One God who is our common Father, is peculiar to Christianity. Though it has been slowly realized it was always implied and even in the darkest periods of her history the Church of Christ was the refuge of the oppressed.

St. Paul asserts these two complementary truths *the fatherhood of God and brotherhood of men* more than once, but nowhere in such explicit terms as in Gal: iii. 26, 28. "Ye are all the children of God by faith in Christ Jesus. There is neither Jew nor Greek, there is neither bond nor free, there is neither male nor female: for ye are all one in Christ." With one stroke of his pen he describes a religion which abolishes distinctions of race, caste, and sex, *so far as these are held to debar* from any of the privileges or rights of the children of One God the Father of all, with whom is no respect of persons, and "Who will have all to be saved and come to the knowledge of the truth."

But we must not fail to note that St. Paul insists upon this

universal brotherhood being realized *in Christ*. And indeed where Christ is unknown and the influence of Christianity unfelt, God is not known and worshipped as the common Father, nor are men at large regarded as brethren; it is just the reverse. When Philip (John xiv.) very naturally said, "Lord, show us the Father and it sufficeth us," Jesus said, "He that hath seen me hath seen the Father, how sayest thou then show us the Father?" And to this also agrees that other saying of his "I and my Father are one."

It is quite superfluous to show that these two fundamental truths so essentially Christian cannot have place in Pantheism which denies personality and therefore any personal attributes to God, if the word *God* can indeed be properly used of such a pure abstraction as the ultimate Being of the Pantheist. Indeed it seems all one to talk of *pure Being*, that is, Being without qualities, and *pure nothing*; to talk of *all God* and *no God*. The world needs a religion that will give light and life and joy and peace *now*, for whatever the theory of human life be, all admit that life in our present stage will determine the character of our life after death. And if God be indeed an intellectual, moral Being (and if not, why should we trouble ourselves about Him at all?) and our Father, we cannot but think that He would exercise a Father's care for his children and reveal Himself in such a way as to remove the darkness and the gloom which hangs around Him and give us more certainty of His goodness and love than we can gather from nature. Natural religion has been tried and found wanting. The creed of the Deist or as some prefer to call it Theist, is too cold and high for the mass, apart from its total and fatal inadequacy to reconcile the demands of Divine justice and the guilty sinner; ideas which are found at the base of every religion, or, as in the case of Buddhism—which is indeed the negation of religion,—are witnessed to by religious ceremonies and worship in the teeth of its philosophy.

Civilization is breaking down barriers between nation and nation. Steam and electricity have brought the ends of the world together, and are creating revolutions in thought and manners which previous centuries of bloodshed and force of arms failed to do. Nations are feeling that their interests are much closer than they were in by-gone ages. Many are running to and fro, and knowledge is being increased, and there is a growing dissatisfaction, which has expressed itself openly in high quarters in Japan, with the old religion. "Now that which decayeth and waxeth old is ready to perish."

The Christian can gratefully see in all this the preparation for

Christ among the Kings of the East, for he knows that in Christ are hid all the treasures of wisdom and knowledge, and that the only religion which is suited to the rapidly developing consummation of the world's history is that which has ever been the handmaid of progress and civilization and which presents to the world's acceptance one whose example as a man was perfect, whose claim to Divine authority was absolute, whose atonement was therefore full and sufficient for the sins of the whole world all through the ages, and whose grace freely offered to *all* is given to those who believe in Him; and he that believeth "hath everlasting life and shall not come into condemnation but is passed from death unto life."

E. Noel Hodges.

LETTERS FROM MYSORE, I.

When Seringapatam fell in 1799 and the usurping Mahomedan dynasty of Hyder Ali came to an end, the British found some difficulty in deciding what to do with their conquest. We did not dare to assume possession of the whole Kingdom for fear of exciting the rivalry of the Nizam and of the Mahrattas. They had indeed been our allies during the war, and we were bound by treaty to divide with them equally the conquered province. But to do this would have been just as dangerous, for the Kingdom of Mysore extended from Palghat in the South, to Adoni in the North, and from the Western Ghats to the Tripetty Hills in the East. To have divided this enormous extent of country into three equal portions, and to have given one to each ally, would have been to have dangerously increased the power of both, and in case of a possible combination of the two against us, we were then scarcely in a position, just after our resources had been strained in order to accomplish the conquest of Mysore, to meet it without considerable risk. We had always treated Hyder and Tippoo as usurpers, and it was therefore out of the question that we should place one of the latter's sons on the throne, apart from the fact that such a Prince would never have remained on friendly terms with ourselves. The old Hindu royal line was almost extinct, at all events there was no direct heir, and all that remained were a few families, from which in former times wives had been taken by members of the Royal house, or

sons taken into adoption. The last pageant king of the direct line had died in 1775, strangled in his bath by order of Hyder Ali for having opened communications with the Mahrattas, with the view of shaking off Hyder's yoke. Following out the wise policy of upholding the nominal power of the Rajah, whilst in reality all actual authority remained with himself, Hyder was anxious to find another puppet to put upon the throne. There were, however, even then no boys of the direct male line, and he accordingly collected a number of children belonging to the different branches connected with the Royal family, and from them selected one. The circumstances of this selection are thus described by Wilks. "He ordered all the children to be collected from the different branches of the house, who according to ancient precedent were entitled to furnish a successor to the throne. The ceremonial observed on this occasion, however childish, was in perfect accordance with the feelings which he intended to delude, and sufficiently adapted to the superstition of the fatalist. The hall of audience was strewed round with fruits, sweetmeats and flowers, playthings of various descriptions, arms, books, male and female ornaments, bags of money, and every varied object of puerile or manly pursuit; the children were introduced together, and were all invited to help themselves to whatever they liked best; the greater number were quickly engaged in a scramble for the fruits, sweetmeats and toys; but one child was attracted by a brilliant little dagger, which he took up in his right hand, and soon afterwards a lime in his left. 'That is the Rajah!' exclaimed Hyder, 'his first care is military protection; his second to realize the produce of his dominion; bring him hither, and let me embrace him.' The assembly was in an universal murmur of applause; and he ordered the child to be conducted to the Hindu palace and prepared for installation." The name of this Rajah was Cham Raj, but his rule was not destined to be a long one. When Hyder died in 1782 Tippoo, considering it unnecessary to continue the pageant of a Rajah, deposed him and relegated him to some tumble-down buildings in Seringapatam. Here he lived with five wives, a grandmother and some other female relatives of the late Rajah. The establishment allowed them by Tippoo was a very modest one, the total cost of the food, clothing and maintenance of the whole family being only Rs. 9,275 a year. The deposed Cham Rajah died somewhere between 1794 and 1799 leaving behind him an infant son, who, when Seringapatam fell, was only 5 years old. It can scarcely be said that

this boy had any legal right to the throne by descent. As a matter of fact for the last hundred years the Rajahs of Mysore had been nothing more than State pageants, and even this line had died out. The throne had been usurped and the usurper had conquered a territory infinitely larger than had ever been possessed by the rightful kings. The conquered usurper was *de facto* and *de jure* ruler of the country and the conquerors might have, with perfect justice, annexed the whole of his dominions, for he himself had provoked the war which led to his destruction. But, as I have shown above, we did not consider it wise to annex the kingdom for ourselves or to divide it between ourselves and our allies. The only other alternative was to slice it up and to give over a portion to a ruler who would be under our control. This was the reason that we installed *Kristna Raj Wadier* as Maharajah of Mysore. Some English writers have praised us for our generosity and forbearance on this occasion, but as a general rule, the history of the world shows that in cases of genuine conquest, it is seldom that much play is given to feelings of sentiment. It may be good policy to exercise forbearance, but if in such a case a nation adopts the policy which it considers best suited to its interests it cannot expect to be credited with generosity in its motives. In the same way a man who adopts for his principle of conduct the motto that "honesty is the best policy" is not honest because it is right to be honest, but because it is profitable to be so. The question of generosity does not therefore enter into our relations with the Maharajah of Mysore; the principle by which we were actuated and which, if the truth may be said, is the principle by which all acts of State, whatever the nation may be, are actuated, was that of expediency. In the treaty which was signed, every precaution was taken to protect our interests. The portion of territory assigned to the Maharajah consisted of about half the whole kingdom as it then stood. According to the amount of revenue calculated for, it was a little less than half, being in the relation of 13 lakhs of pagodas as against fifteen, and which were distributed amongst the allies. We retained the districts to the south yielding a revenue of about 7 lakhs of pagodas, but burdened with a maintenance of about two lakhs to the family of Tippoo; the Nizam received the greater portion of the so called Ceded Districts, calculated to yield 6 lakhs and 70 thousand pagodas, but subject to the grant of a jaghir yielding seventy thousand, to Cummer-ud-din, Tippoo's chief general; and the remaining portion, valued at rather more than two lakhs and a half, was to go to the Peishwa.

This latter territory more than represented the value of the services which that Prince had yielded during the war, for he had actually taken little or no share, and the value of his alliance consisted mainly in the fact that he had not joined Tippoo. The Peishwa however was dissatisfied with the share allotted to him, and it was probably this dissatisfaction that five years later led to the outbreak of the Mahratta war. For the present he merely refused to accept his share and it was consequently divided between the Nizam and ourselves. It consisted of districts now forming portions of the Bellary District. As regards the Nizam's share we have already seen how it passed into our hands as a payment for the subsidiary force which we bound ourselves to keep up at Hyderabad. The Maharajah, therefore, was left with a compact Province of some 27,000 square miles in extent, shut in on all sides, except to the North, where the Mahrattas still ruled, by districts in our possession. He was further bound to pay seven and half lakhs of pagodas as military contribution for the defence of his kingdom whilst from the revenues of the State he was to receive a fixed allowance of one lakh of pagodas and one-fifth of the net revenues. Assuming therefore the total revenue of his province to have been thirteen lakhs and seventy four thousand pagodas, the military subsidy would amount to seven, his personal allowance to a little more than two, and the state revenues to upwards of four lakhs. From these figures it would seem that the military subsidy was very high, being more than 50 per cent. of the whole revenue, but it must always be remembered that these calculations were utterly untrustworthy, as has invariably been the case when, in the course of our career in India, we have taken over a native province. The schedules used on this occasion were those which had been furnished by Tippoo after the first siege of Seringapatam in 1791, and in these the valuation of the different districts had been purposely underestimated by about one half of their real value. As a matter of fact therefore the revenues of the Maharajah's territory were not less than 20 lakhs of pagodas or about 70 lakhs of Rupees. The military subsidy was therefore 24 lakhs or a little more than one-third, and the Rajah's personal allowance, together with one-fifth of the net revenues, amounted to not less than 12 lakhs, leaving 34 lakhs for the purposes of administration. The Maharajah was also bound to furnish military assistance in the event of war, the extent of this assistance being left unlimited, and there was a further proviso that if there was any failure in the payment of the subsidy we were

to assume such portions of the territory as might be necessary, securing always to the Rajah the stipulated personal allowance.

The above were the circumstances under which the new Mysore Rajah was inaugurated, and it can scarcely be said that the task before the new administration was an easy one. The country had been reduced by nearly 50 years of constant warfare; the cultivators had been subjected to exactions without number; the land-owners had been oppressed, trade and commerce were stagnant, large tracts of country were depopulated and the whole province was in a highly critical state. For many years past Hyder and Tippoo had been able to carry on their numerous wars, not so much by the aid of the State resources as by means of the treasure which they had captured, in the conquered towns. At Bednore alone, which had been captured by Hyder in 1763, and which had the reputation of being the richest town of Southern India, he had carried off a treasure valued at no less than 12 millions sterling, and Hyder himself used afterward to observe that this booty was the foundation of his subsequent greatness. It must not therefore be assumed that the fact of so many wars having been carried on was a proof of the richness of the country. The time was one of the breaking up of the minor Indian states in consequence of the decline of the Delhi Empire. The sky was falling, and the boldest robbers succeeded in catching the most larks. Hyder had been one of these in a pre-eminent degree, but what he had amassed had been almost entirely dissipated by his son Tippoo, and when Seringapatam fell in 1799, all that remained was an almost exhausted treasury, and a well nigh ruined country. The man, however, who was chosen to fill the post of Dewan to the infant Raja was well fitted for the difficult task. This man was Poorneah. Poorneah was a Madhava Brahmin and a native of Coimbatore which in Hyder's time formed a portion of the Mysore State. He had entered the service of the state early in life and had at first been employed in a very subordinate capacity. He was subsequently employed in the Treasury, and it was here that he first attracted Hyder's notice. This extraordinary man, who throughout his life was never able to read or write, had nevertheless a remarkable aptitude for business. He would hear long accounts read over and at once detect an error, and there was scarcely a subject of importance that was not brought to him for orders. It is one of the attributes of great men to be able to select great men as their subordinates. Throughout history we seldom find an example of a great man standing alone. He is always surrounded by a galaxy

of genius. A great man's lieutenants are only second to him in greatness. The men of genius are always to be found, but it is the fate of mediocrity to be unable to detect them, the reason probably being that such persons are so eaten up by their own conceit that they can look no further than themselves. They are therefore inclined to select those only who will treat them with adulation and flattery. The first and the third Napoleons are examples of this law in modern European history, and Hyder and Tippoo are illustrations of the same. Hyder was born to create a kingdom, and as he himself always prophesied, his son Tippoo was born to lose what his father had gained. Under Hyder, Poorneah rapidly rose to the first place in the administration of the State. He appears to have been a man of strict honesty, of considerable administrative talent and of strict if not parsimonious habits. He generally accompanied his master on his expeditions, and it was owing mainly to his foresight that when Hyder died Tippoo was able to ascend the throne without opposition. This death occurred whilst Hyder was returning from a campaign in South Arcot. For many years Hyder had been suffering from carbuncle, a disease which appears to be common amongst Indians of high rank, so much so that it is generally known as the "Rajah's boil." When Hyder's death occurred, the army was marching home through the Chengamah pass, a narrow defile of the Jawady hills about 30 miles from Tripatore in the Salem District. Tippoo was then on the Western Coast, and, knowing that if the army should hear of their leader's death, a mutiny would be inevitable, the astute Dewan kept the occurrence concealed. The body was secretly embalmed, wrapped in spices, placed in a closed palankeen, and carried as usual on the daily march. Each day Poorneah went to the doors of the palankeen, and was apparently engaged in conversation with the occupant, after which he gave out that Hyder was doing well but was still suffering from weakness. In the meantime a mounted messenger had been despatched to Tippoo more than 500 miles distant with the news of his father's death. Tippoo at once left his camp, and travelled post haste to Seringapatam which must have been between 300 and 400 miles distant from the place where the news reached him. So secretly and expeditiously was the matter arranged, that 21 days after his father's death, Tippoo was in the capital, and simultaneously with the publication of the news he assumed charge of the Government. This solitary incident may serve as a good example of Poorneah's fidelity and sagacity. Under the head-strong

and suspicious Tippoo, Poorneah had by no means an easy time of it, not only was he in constant danger of false charges being brought against him, (and my readers will well understand what Indian court intrigues are, especially in such a court as that of Tippoo must have been,) but the fanaticism of his new master was such, that he, a Brahmin, was often in danger of being made a forcible convert to Mohammedanism. This species of conversion was practiced upon thousands on the Western coast and was often employed on Tippoo's personal adherents. One case brought about its own revenge. When for the first time in 1791 Lord Cornwallis marched upon Seringapatam, the fort of Bangalore fell almost without a struggle. Treachery had been at work and the walking stick of an emissary from the intelligence department of the British army, was found to contain a treasonous letter from Mahomed Abbas, a Brahmin forcibly circumcised. 'Abbas fully confessed but refused to implicate others. "How long" said Tippoo "have you been a traitor?" "From the period that you began to circumcise Brahmins," was the undaunted reply. The unfortunate man was dragged to death at the feet of an elephant, and some other Hindus supposed to be implicated were strangled,' (Wilks). For nearly 17 years, however, Poorneah managed to steer clear of these dangers, and when at last Seringapatam fell, and his master's dynasty was at end, he proved to be so useful to the conquerors in the settlement of the accounts and the pacification of the country, that he was chosen to be the Dewan of the new Rajah. Colonel Barry Close was the first British Resident and the future Duke of Wellington (then General the Honourable Arthur Wellesley) was the Commandant of Seringapatam. So exhausted were the pecuniary resources of the country that before the work of reform was commenced, a loan of several lakhs of Rupees had to be taken from the British Government to enable the current expenses to be paid. The first step was a very wise one, and it was publicly notified that all outstanding arrears of land revenue were remitted, thus enabling the cultivators to start afresh. In a little more than a year Poorneah was able to repay the loan to the British Government; the subsidy was punctually paid and there was at the same time a large surplus in the treasury.

By far the most interesting and reliable account of the administration of the Mysore Province is to be found in the official report of the year 1872-73, compiled, I believe, by the late Mr. W. Welles-

ley of the Madras civil service, who was then secretary to the Chief Commissioner. In it we find that the amount of revenue derived from the state from the middle of 1799 to the end of 1802 was only Rs. 65,85,419 or an average of about 20 lakhs per annum. This I fancy must be a mistake, for this amount would have been insufficient to meet the military subsidy alone. The figures probably represent the average revenue for these years. This would seem to be the more probable, because in the following year 1803-4 the total land revenue is given at 65 lakhs (round numbers) and from this time it annually increased until it reached in 1808-9 a total of very nearly 80 lakhs of Rupees. During the two following years it declined to 70 and 60 lakhs respectively, these being the two last years of Poorneah's administration. It is, however, a remarkable thing that during these years of native administration the land revenue reached a higher figure than it subsequently did at any period up to within a few years ago. It is difficult to account for this high rent roll except by ascribing it to the result of good administration. Some writers, and amongst them Colonel Malleson and the author of the 1872 report, charge Poorneah with having overtaxed the people and by excessive rates brought about a fictitious state of financial prosperity which in reality tended to impoverish the country. This, however, would scarcely seem to be fair; writing so many years after events it is easy to bring a charge of this kind, but exceedingly difficult to prove it. The fall of the revenue in the last two years may have been due to famine, loss of crops, reduced assessments or many other causes. At all events whenever a native State under our management increases in revenue we are in the habit of pointing to the increase as a proof of our good administration, and it is therefore only fair to apply the same test in the present case. This for instance was the test applied in the case of Sir Thomas Munro. This celebrated man was placed in charge of the district conquered from Mysore and given to the Nizam as his share, but afterwards ceded by him to us in payment of the subsidiary force at Hyderabad. The two cases are very nearly parrallel. Here are two provinces which belonged to the same State, taken over immediately after the war and administered, the one by an European officer of the very highest and acknowledged merit and the other by a native. Sir Thomas ruled the Ceded Districts from the time of their cession for the first eight years, and Poorneah for eleven, so that the periods of time very nearly correspond. Let us now look at the results; as shown above the schedule assessment for the

Ceded Districts (*i.e.*, the Nizam's share of the conquered territory, plus the share declined by the Peishwa,) amounted to about 9½ lakhs of pagodas or say Rupees 30,00,000 in round numbers. As usual this estimate was found to be too low, and in the first year the collections amounted to 33 lakhs. This sum increased every year until in 1809, the highest year of Poorneah's revenue, it amounted in round numbers to 55 lakhs being an increase of something more than two thirds. It is true that in 1809 Munro was no longer in India, having left in 1807, but in the year of his departure the revenue was as high as 45 lakhs and the subsequent further rise is generally admitted to have been due to his administration. Now the schedule assessment of Mysore was 13½ lakhs of pagodas or say 45 lakhs of Rupees. It is only fair to assume, as in reality was the case, that in Mysore also the schedules were under-estimated, and we will suppose that they amounted to 50 lakhs. This being so the amount of revenue realised in 1809 (77½ lakhs) was only a little more than 50 per cent in excess of what it had been when Poorneah assumed charge. The increase in British territory, however had been more than 66 per cent. There would however have been far greater reason for supposing that Munro levied an unfair assessment than Poorneah, because the schedules he went by were those which Tippoo had submitted in 1791. Now at that time it was Tippoo's object to make out that the outlying districts were very valuable, because it was from them that he had to make cessions. The home districts however were purposely under-estimated in order that the British should leave to him as many as possible. It is therefore extremely probable that the actual revenue of Mysore was in the first year very much greater than the scheduled amount and that the increase in 1809 was in reality not more than 20 or 25 per cent. In the Ceded Districts it was different, and there can be no doubt that the rates there taken were too high, because before he left Munro himself recommended a general reduction all round of 25 per cent. on dry and 33 per cent. on wet land. It would therefore seem that the increase under Poorneah was nothing more than a legitimate one, and it is most unfair that our administrator who increased the revenue by 66 per cent, and who himself admitted that the rates were too high, should be extolled to the skies as a model European administrator, whilst Poorneah, who apparently only increased the revenue by 50 per cent and in reality by about 25 per cent, should be reproached with having impoverished the country. There are unfortunately only too many

legitimate causes for fault finding in native administration and it is therefore doubly incumbent upon us to do full justice to those who deserve praise. Another proof that Poorneah's rates could not have been excessive is to be found in the perfect repose in which the country remained during his rule. During the first year immediately after the fall of Seringapatam, the country was in a disturbed state. This was to be expected where so large an army as that of Tippoo had to be disbanded. But with this exception the country remained in a state of profound peace, although after the Dewan left office, two years of the young Rajah's mismanagement were sufficient to set the country in a blaze. If Poorneah had rack-rented the ryots they would have risen long before. After a year and a half had passed under the new administration, General Wellesley wrote to the Resident, Colonel Close; "The Dewan under your direction seems to pursue the wisest and most benevolent course for the promotion of industry and opulence, the protection of property, and the maintenance of internal tranquillity and order in Mysore." Evidence of this kind written at the time by such a man as Arthur Wellesley, must outweigh all detraction made fifty or sixty years after the events. Poorneah's zeal and ability were further recognized by the grant to him of one per cent on the revenues, in addition to his salary, a boon which was gained for him by Josiah Webbe of the Madras Council. In gratitude Poorneah erected to Webbe a granite pillar to the north of Seringapatam which however is now known by the name of the "Rana-khambha" or bloody pillar, since it was here in 1809 that the last scene of the tragedy was acted which was brought on by Sir George Barlow's indiscretion. I allude, of course, to the unhappy mutiny of the British troops in Seringapatam, Vellore and Hyderabad.

Poorneah may have been parsimonious, but he was not niggardly in spending money on the improvement of the country. During his eleven years of office he spent no less than Rs. 77,29,310 on public works, nearly fifty of which were devoted to irrigation works such as tanks and channels. The other works were wells, bridges, bungalows, chuttrams, cutcherries, &c., and one work of great magnitude known as Poorneah's Nalla cost no less than 17½ lakhs.

This work unfortunately has never been finished. The object of it was to bring the water of the Cauvery into Mysore. Some European engineers have declared the scheme to be impracticable owing to the levels, but it is to be doubted whether so shrewd a man would have spent so much money on an impossible task. I am the

rather inclined to believe that when Poorneah left office, there was no one with the wish or the determination to carry the work through. Roads do not seem to have engaged the Dewan's attention, for during his term of office he spent only Rs. 67,762 on their construction and repairs. With reference to this subject the author of the report of 1872 says "Poorneah's ignorance of the impetus which roads would give is excusable, seeing that even several years after this period, a Secretary to a neighbouring government gravely impresses upon a too restless engineer, that His Excellency in Council could see no necessity for spending money on the roads he proposed for the reason that as yet there were no carts to take advantage of them."! Altogether during his eleven years of office Poorneah spent on an average more than seven lakhs on public works or seven lakhs more than the total spent during 25 years of British management from 1831 to 1856, and within two lakhs of the total amount spent last year. To have done this shows not only what enlightened views this really great Indian statesman must have had, but also what a careful and thrifty supervision he must have exercised over every branch, for not only was the whole internal machinery of administration kept in thorough order, but when he left office there was in the Treasury an accumulation of no less than seventy-five lakhs of pagodas (262 lakhs of Rupees), besides jewels, &c., of considerable value. In addition to this a rough survey and settlement had been carried out and every department was in a thoroughly efficient state.

And now let us look at the reward which was given to this eminent statesman, of whom India may well be proud. After a life time spent in honourable and faithful service to the State, he died superceded and broken hearted. In 1811 the young Rajah was sixteen years of age, and it chafed him to be under the control of so thrifty a minister; accordingly he told the Resident that he wished to govern for himself, and the Dewan was dispensed with. The Resident endeavoured to secure him a share in the administration, but he declined to take office as a subordinate and retired into private life. This was the signal for the vultures, of which there are so many in every country and especially in India. Charges of peculation were brought against him and he was ordered by the Rajah to refund a a large amount of money which would have left him nearly penniless. A portion he paid and then the Resident interfered and the remainder was remitted, and the broken hearted aged minister was allowed to depart to his jaghir. This was in December 1811. The British Government still showed him favour and soon afterwards he received

a communication from the Governor-General offering him a pension of five huundred pagodas (Rs. 1750 per mensem). But it was too late; the ingratitude of his Prince had broken his heart and on the 29th March 1812 he died. He might well have exclaimed in the words of Holy Writ—Put not your faith in Princes. He left behind him a family, and his grandson now occupies an honourable post in the service of the State.

J. D. B. GRIBBLE.

CHILD-MARRIAGE AND ENFORCED WIDOWHOOD, II.

Thus far we have simply negatived the reasons *for* the practice of Child-Marriage, we now proceed to state the positive reasons *against* the practice. And here we have a long black list of wrongs which surely every healthy conscience, every independent judgment, must admit.

1. Child-marriage *injures the child-wife.*

(*a.*) *Physically*: which point need not be enlarged on. It is sufficient to affirm that it stunts the growth, and arrests the development of the constitution. While general knowledge has been advancing in the country with rapid strides in recent years, the laws of human physiology continue to be persistently ignored.

(*b.*) *Mentally*: by interfering with the girl's education. By taking her away from her books just when she has begun to overcome the difficulties of learning, and just when the taste for knowledge is beginning to be acquired. It takes her away from the best teachers—nature and the world around her—and shuts her up in the zenana, away from all the influences that ennoble and expand the mind. Married as a child, she remains intellectually a child all her days; can do little for herself, and little for the education of her children—one of the primary duties, and one of the chief sources of the happiness of domestic life. Female education can be properly carried on only by the abolition of the early marriage system. The "Hindu Lady," whose letter in the *Times of India* has attracted so much attention, says:—

"I am one of these unfortunate Hindu women whose hard lot it is to suffer the unnamable miseries entailed by the custom of early marriage. This wicked practice has destroyed the happiness of my life. It comes between me and that thing which I prize above all others—study and mental cultiva-

tion. Without the least fault of mine I am doomed to seclusion; every aspiration of mine to rise above my ignorant sisters is looked upon with suspicion, and is interpreted in the most uncharitable manner."

Hindus should think about the *minds* of their girls rather than about their marriage. They should think how they can make them *women* first—women who may take their place in social life—and wives and mothers after. What right have we to deprive the other sex of knowledge and cultivation; to deny to them those blessings that can alone contribute to human happiness and usefulness? Who has authorised us to keep any human being in subjection and seclusion? If this is Manu's teaching, then is it not opposed to the dictates of reason and justice, and to the progress and welfare of the world? Have not women the same Father in heaven, the same souls, the same intellectual and moral faculties, the same cravings and aspirations as men? And we insult their God and ours, we defame our sex, we forfeit our manhood, when we treat them as inferiors. India will never rise in greatness till her men have a higher respect for womanhood; till they learn that in all respects, in the sight of God, and in the eye of civilized law, men and women have equal rights and claims. If physical disability or mental inferiority be the ground for denying to women the same rights as men, then on what ground can any subject nation claim equal privileges with the one that governs it?

(*c.*) Early marriage injures the child *socially*: by taking her away from her family and friends just when she is beginning to realise her position in the home, and her relation to those around her. It thus breaks up, all too early, the family circle; robbing a home, which is pledged to nurture her, of its brightest ornament, and of a refining and helpful presence; while it hands the child over to the tender-mercies of those whom she does not know, and who are too apt to keep her in a low position.

(*d.*) It injures her *morally and religiously*. It deprives her of the moral and religious influence of school life, if she has been fortunate to secure it; and by being brought at so tender an age face to face with a husband, nature is grossly violated, and the most disastrous effects are produced on the mind of the child. A process of moral deterioration inevitably sets in. Absolute purity, the utter negation of sex, is the law of childhood; but instead of innocence, a precocious knowledge shocks and harms the nature.

2. Child-marriage injures the *boy-husband* in the same way as it injures the girl.

(*a.*) By physical and moral degradation. In youth, when physical growth has still several years before it, continence is rigidly demanded. Chastity at such an age means conservation of life, while indulgence means deliberate waste. And to commit weakness and innocence to the unformed, untamed nature of a boy, the animal part of whose nature is in the ascendant, is to tempt him to acts of cruelty and baseness.

(*b.*) By interfering with his education. By burdening him with family cares when he needs all his time and energies to fit himself for his place and work in life; and by debarring him, after his student life is over, from one of the best educators of the mind, *viz.*, travel.

(*c.*) By uniting him to a wife who can never be a companion; who can take no intelligent interest in his interests and pursuits; can never counsel and help him in perplexity; cannot manage his household affairs, and cannot train his children. He may have a plaything or a mistress, but not a "help," meet for him.

3. It inflicts gross injustice on both parties, by allowing them no choice in the most important event of life—an event that concerns them infinitely more than it concerns their parents; and by thus creating for them what turns out to be, in too many cases, an uncongenial home. It is not meant that parent or guardian should be rudely pushed aside, and not consulted in the marriage of their children. That is as much opposed to English as it is to Indian custom. In England, where liberty of choice is enjoyed by every man and maiden, parental advice and control are sought and exercised to a large extent. But no parent would think of robbing son or daughter of their rights as individuals, by forming a responsible alliance without their clear consent. The marriage union is for life, and no power on earth, however ancient or sacred its pretensions, has the right to deprive an individual of the option of declining a connection that may lead to prolonged matrimonial misery, and to early and perpetual widowhood.

4. The *children* of such marriages are injured—physically, intellectually, and morally injured: in not having a mother who can train them, and to whom they can look up with reverence. To home education the West owes its greatness. The first book read, and the last laid aside by every child, is the behaviour of its own mother. The great men of the world have been those, to a large extent, who have had mothers of moral and intellectual strength; and who have owed their success in life to a mother's early influence.

And such children are injured through inheriting a custom that tells perniciously not only on themselves but on *their* children after them.

5. It thus injures the *country and nation*: by raising the rate of mortality; by making women old when they ought to be young; by depriving the country of educated women, who in other lands can take their part in promoting the well-being of the State*, and of the service of educated men, who ought to be its best friends and reformers, but who are hampered and weakened by early matrimonial cares. It is not denied that purity of blood and supremacy of intellect have been preserved to a remarkable degree among the Brahmans, by their marriage customs, weak as they may be in physique as compared with the other classes of Hindus; but what has thus been so jealously preserved to one class, might with advantage have been distributed through the nation. And in spite of intellectual superiority, do we not see to-day the evil of the system, in the abortive attempts to effect the social regeneration of India? The weakness and half-heartedness we witness are largely due to this very custom. Hindus themselves have confessed that in the paralysed arm and wavering will they have the strongest and saddest proof that they are suffering under the curse of this pernicious practice.

And, while impoverishing, it retards the progress of the country. Early marriages are ruinous to thousands. The money spent does no good whatever to the children—very often the reverse; and the debt incurred by the father is passed on, an ever accumulating debt, to son and grandson. If such wasted sums could only be spent on the education of the young, India would begin to prosper. One of the chief ways of increasing the material wealth of a country is by cultivating its industries—its commerce, agriculture, manufactures. Supposing there were institutions started for instruction in such pursuits, the people have no income; they have squandered it on their marriage ceremonies; and, moreover, a vast majority cannot spare the time, lost in domestic worries, to learn an occupation that requires long and patient application. If young people, who were beginning to look after themselves and their own interests, could postpone for a while a

*In England, there is a noble army of 122,846 women engaged in educational work—94,221 of these as school mistresses, and 28,645 as teachers, professors, and lecturers; 5,989 engaged as commercial clerks; 6,233 in connection with the Civil Service and Municipal Boards; and altogether 3,304,000 engaged in various industries and occupations.

matrimonial life, and then make their own matches, (not however without the counsel and direction of their elders,) would they not be wiser and more provident than their officious friends?

Early marriage is thus the fruitful source of countless evils to a country, among which must be included early widowhood, immoralities, and murders. Mr. Malabari says:—"there is no hope of political elevation for us, as long as we live, and apparently love to live, in such social degradation." And the learned Dr. Mohendra Lal Sircar of Bengal says:—"It is the greatest evil of India. It has stood at the springs of the life of the nation, and prevented the normal expansion of which it is capable."

6. The last and blackest charge we shall bring against it is, that it *makes widows*: and what the Hindu widow means, with her enforced widowhood, the whole civilized world knows, alas! too well. Her sorrows and her sins have made many a heart bleed in other lands, and have gone up to Heaven these many centuries with their dark tale of wrong. The Census Report of 1881 showed that there were 78,000 widows under 9 years of age; 207,000 under 14; and 382,000 under 19; altogether over 600,000 widows who ought never to have been married, and who are doomed to life-long bereavement. The same Report showed that the total number of widows in British India was nearly 21,000,000. It is said that the Brahmans are responsible for three-fourths of this number; nearly one-third of Brahman women being widows.

Now what can be said of a system that leads to such a state of compulsory widowhood, with all that is associated therewith—deprivations and degradation, shame and ignominy, immorality and vice, infanticide and suicide? It has been affirmed that "there is a regular system of free masonry maintained for the purpose of concealing infanticide, which baffles detection;" that "there is scarcely a village in India, scarcely a hamlet, whose shrine is not desecrated by murder." If that be true, it comes of marrying girls in infancy, either to infant boys or to grown-up men, far advanced in years—the most obnoxious and revolting of all marriages—a barter for mercenary ends, since the money demanded by the parents from the bridegroom in such cases is doubled or quadrupled according to his age! In either case, on the death of the husband, the poor girl has perpetual widowhood before her, even though she may never have met her husband, and is an infant still. From that day, her life is a social failure, a dark list of shameful wrongs, a menace to society. And on her tender innocence and

unmerited sufferings, the cruel reproach is often flung that she is the cause of the death of her husband, through her having done some grievous wrong in a former life! Thus she drags on an existence scarcely less horrible than *satī* itself.

The radical cause of such cruelty must certainly be wrong. Though lawgiver and priest combined to enforce child-marriage and its inevitable result child-widowhood, surely one's own humanity, which is above them both, would be compelled to set them both at nought, and to pronounce their teaching false; would compel one to do his utmost to rescue his country from such a state of social degradation.

The abolition of child-*marriage*, which is the root of the evil, and should therefore first be dealt with, would abolish child-*widowhood* and would, in the natural course of things, remove the prejudice against the re-marriage of widows in general—at any rate in the case of the young; for when women, and not children, are taken in marriage, the marriage of widows, who are mostly women, will cease to be in India, as in other countries, a matter of singularity.*

But the consideration of this subject would be practically useless if we did not ask, what are the *remedies* for the evil? To admit that it is indeed an evil is to have travelled a long way on the right road; for if it be an evil, it should certainly be removed. But how is this to be done? That is just the difficulty which everybody that sees the evil feels; and which all must unite in grappling with. It will not do to admit the evil, and smile at it, and fold our hands as we would before a mountain that had to be removed. Not so have brave men done with the evils of the past. It must be felt, and faced, and dealt with, in an earnest, manly, and determined spirit. The apathetic Hindu nature must be roused, and made to feel that it can be and should be master of its circumstances. We

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* It must not be supposed that we advocate a wholesale re-marriage of widows. There will always be found in every country a natural sentiment against it, especially in cases where the marriage union has been a lengthened one. All that is contended for is that women, like men, should he left to judge for themselves, and that no legal or social disabilities should prevent their doing so. There are unquestionably many Hindu texts to show that the re-marriage of widows was *allowed* in ancient India. Brahmans were allowed, in Vedic times, to marry widows of their own caste, (see Arthava-veda IX. 5, 27;) and also widows of lower castes (Arthava-veda V. 17, 8.) From the Smritis, a very similar text has been quoted from the Institutes both of Parásara (IV. 28) and Nárada (XII. 97,) which states the several cases in which a woman is allowed to re-marry, and among them is the death of her husband. Manu distinctly recognised re-marriage (see IX. 167, 175, 176;) and in V. 162, in denying re-marriage to a *Sadhivee* woman, he implies that it is permissible to *ordinary* women. Many other authorities will be found quoted in an article on "The re-marriage of Hindu women," in the *Indian Evangelical Review* for April 1884.

know that Hindus are averse to noisy agitation, and like to discuss things quietly. That is an excellent trait of character, worthy of a philosophic nation. But the danger is lest the discussion should be prolonged interminably. Have not educated Hindus thought of these social problems for the last twenty years, and discussed them, theoretically and practically, through and through? Has not the time for action now come. By all means let it be done quietly among Hindus themselves, but let them see that something *is* done.

There are some who advocate State interference, to some extent; but the State is not likely to interfere in such matters, unless urged to do so by the people. Government interference would be inconsistent with its avowed desire to meet the growing demand for local *self*-government; though Government should at once show its active sympathy with the efforts of all voluntary associations for social reform, and should no doubt be prepared to move as soon as there is a decided expression of public opinion.* For it is quite possible that enlightened public opinion and combined action among Hindus may have to be sustained by the moral co-operation of the State, in the initial stage of reform; yet only so far as marriage is a civil institution. Government *interference* in social matters, which is widely different from State *co-operation*, is a delicate subject: the usages of many centuries may not be rudely set aside by the criminal law. The people and the law ought never to be brought into antagonism; but the people should be won to the side of the law. Sudden social changes involve serious risk to the well-being of a people; and child-marriage and widow re-marriage are essentially social problems, which can only be solved by a radical change of opinion among the people themselves. The reluctance of Government to interfere in such matters was shown in relation to the petitions against the polygamy of the Kulin Brahmans of Bengal. One of these petitions was signed by 21,000 Hindus, and headed by the Maharaja of Burdwan, yet the Governor-General in Council was of opinion that "the people generally were not prepared for so great a change." This shows how much must *first* be done by the reforming party, and by the people themselves.

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* In May 1881, a memorial signed by representatives of every Christian Mission in Western India was presented to the Bombay Government, to be forwarded to the Government of India, asking relief for Native Christians married in childhood—that such a law might be passed as should allow child-marriages to be treated as betrothals. Government replied that it could not legislate in connection with infant-marriages except *at the wish and with the co-operation of Hindus*; and that it might be hoped that before long *Hindus would themselves seek an alteration* of the law regarding such marriages.

And this, unquestionably, is what Hindus have first to do, in their own national quiet way, towards directly removing the evil. They must not discuss any more, but act. They must begin to let their opinions be known and felt among the people, not rudely and haughtily, but with consideration, moderation, and intelligence. Carefully and tenderly, they must put in "the thin end of the wedge." They must bear in mind that their opinion is the opinion of an educated minority, and as such is at present a mere theory in the country, and not likely in itself to carry much weight; that outside their little circle, and altogether distinct from it, is native opinion—the opinion of the mass of the people, and pre-eminently of the female portion, led by the priests and pandits; an opinion which we may not often hear expressed, but which we know exists; and exists as the real obstacle in the way of all social reform. The educated minority must work quietly and busily on this native majority. This is their province as the custodians of educated thoughts and aims; it is the duty which their Western culture demands of them. They must get the leaders of their Hindu castes to reconsider their immemorial customs in the light of modern ideas. These must come to see that the world is moving on, and that we have to think of the future as well of the past. They must be shown how the evils of child-marriage have gradually grown up—what they really are, and how the welfare of the country calls for some reform. The cause will never have success unless Hindu society is, to some extent at least, carried with the reformers. True the power of the priest is on the wane, and his opinion cannot count for what it once did, yet it would be foolish to ignore it.

But, in addition to this persuasive action, some other action on the part of the advanced section of Hindus is urgently required. "Example is better than precept." Those who advocate change should be prepared to act up to their convictions. They should aim to discourage the custom in every possible way; they should bring it into disrepute—among other means, perhaps by lively satire, a most useful moral weapon in the past—and they should do their best to break down the interests that uphold it. Above all, they should set the example, and be "a law unto themselves;" and show in their own homes and social circles the excellence of it. For the obstacle lies, we suspect, more in certain members of a caste who are related to one another, than in the caste as a whole; and therefore a beginning should be made by the educated members of such families. Of course those who do this must be prepared to suffer

somewhat; and alas! people are slow to be martyrs for the public good, where the evil affects others more than themselves. But history teaches that no great reform has ever been carried through without some self-sacrifice. If Hindus have not the moral courage to face the difficulties and trials incident to all reform the conclusion will be inevitable that they have no real desire to change their social customs.

Associations should, we think, be formed in all the leading towns, whose members should solemnly pledge themselves to this course of action. What individuals cannot do alone, they may often do together. And by means of lectures, and the power of the Press, and through the greater power of example, such associations must bring their influence to bear upon the people. And thus having done all they can do in a quiet way, then, if they still feel they need a higher help, and are satisfied that "the people are ready to go a step further," let the Hindu leaders, if they see fit, send in strong memorials to Government, urging the necessity of some indirect legislation, and carefully pointing out the direction that such legislation should take.

An Act might then perhaps be passed requiring the official registration of all births and marriages, with the ages of marriage, and of all deaths as well, for the mortality among child and girl-wives must be abnormally great. Valuable statistics would thus be collected; and the law should recognise no marriage unless so registered. The people are already accustomed to Registration Acts, as in the case of vaccination, and need not be alarmed at more.

It has been suggested further, that, some time after, if the custom still continued obstinate, and was evidently maintained by interested parties, it might be declared that all marriages contracted under a certain age, say thirteen, were violations of the law of nature, and of the British Government, and probably of ancient Hindu law as well, and punishable with a fine proportionate to the expenditure on the marriage by the guardians of the bride; without, however, at first declaring the marriage void. Whether this would be politic, time alone can show.

Might not the law, at any rate, protect the right of the parties who have been betrothed by others, to decline a marriage, if they thought fit, on attaining the age of discretion? Betrothals should be treated as such; to be consummated or not as the parties please. This is granted by Muhammadan law. Either party may repudi-

ate the marriage, on attaining their age; though even here, we believe, a girl can only refuse if the marriage was contracted by other than father or grandfather.*

Some enactment also seems necessary in order to check inhuman parents from sacrificing and selling their girls for their own benefit. Money received in this way from the bridegroom should at least be safely reserved for the girl's exclusive use.

But the point that requires most consideration, inasmuch as it touches the centre of the whole matter, concerns the *consummation* of a Hindu marriage. In April of 1884, a committee, appointed by the recent Calcutta Decennial Missionary Conference, memorialised the Government of India to take steps for the relief of sufferers from the marriage and divorce laws of British India. A reply to this memorial was received in July last, in which it was stated that "the Governor-General in Council is averse to undertake legislation for the purpose of setting aside an unconsummated infant marrriage, on one of the parties thereto becoming a convert to Christianity."† The memorialists are reminded of Act XXI of 1866, which was passed in order "to legalise, under certain circumstances, the dissolution of marriages of native converts to Christianity;" and are informed that "the principle for which the memorialists now practically contend, namely, that Hindu child-marriages should be regarded only as betrothals and therefore as liable to dissolution at the option of either party, was discussed and deliberately rejected on the grounds—

(1) that a marriage between Hindu children is valid and binding without consummation; and

(2) that if dissolution of marriage was allowed simply on the ground of difference of religion, direct encouragement would be offered to insincere conversions."

That is to say, the Government of India has proceeded on what the best modern Hindu reformers maintain is a misinterpretation of Hindu law. The Law Courts have expounded Hindu law as best they could, and the consequence is that Hindu customs are now

* Mr. Justice Pinhey, late of the High Court of Bombay, recently took the first bold step in this direction, and departed from the Government interpretation of the law. He gave judgment for Rukmibai, the step-daughter of Dr. Sukaram Arjoon of Bombay, who was married ten years ago, but whose marriage had not been consummated owing to the ill-health and poverty of the husband. On coming to years of discretion, she repudiated the action of her elders in having disposed of her person as a child. The judge said "there was nothing more barbarous than to compel a young lady to go to a person whom she disliked."

† See *Indian Evangelical Review* for October, 1885. p. 236.

regulated and upheld by such misinterpretation. It has been the main contention of Mr. Ragunath Rao and of those associated with him, that an *unconsummated* infant-marriage is not to be regarded by Hindu law as a true marriage; and that until consummation, the wife cannot claim civil rights from her so-called husband. This then is the point that now needs to be pressed home. The legislature should be required to recognise this fact; and it may very likely grant to Hindu representation what it will not grant to Missionary representation; and in so doing afford relief to both Hindu and Christian sufferers.*

Legislation is also urgently required in cases of desertion, where according to Hindu law, extensive polygamy is at present allowed. In such cases, women, whose husbands have deserted them and contracted other marriages, should certainly be permitted to remarry *without the consent* of the former husband. It is only fair that such a deserted wife should be as free to form a new engagement as the husband who deserts her.†

Mr. Malabari thinks that the Universities might check the practice of child-marriage by excluding married students from its examinations. But this, in most cases, would be to punish the young for the misdeeds of their elders; to say nothing of arresting education which is itself the best reformer. Nor is it the province of universities to lead social reforms, or to inflict penalties on those who hold certain views, and follow certain customs.

With regard to the poor widows, and to the crime that is known to be the outcome of enforced widowhood, any law that Government might make would be sure to be evaded; but every widow should have justice done to her as much as to any other member of the State, and no custom and no caste power should be allowed to interfere. If a widow suffers social ill-usage; if she suffers disabilities in the

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* There are several Hindu texts to show that mere betrothals or unconsummated marriages were followed in ancient times by marriages to others than those to whom the girls were betrothed in infancy. Manu (IX. 69, 97,) says that a damsel "whose husband shall die before consummation" shall be given in marriage to his brother. Nārada (XIII. 3, 24, 31,) states the cases in which a "mutual engagement may be dissolved; and permits a damsel to choose another bridegroom" when the one to whom she was espoused "goes abroad." Morever, the "Customary Law of the Panjab"—the earliest seat of the Aryan Hindus—shows that the most *primitive* customs of the country recognised that an unconsummated infant marriage was voidable; and the parties were allowed to contract other marriages. The ancient customs that have survived in Travancore are very similar. (See *Indian Evangelical Review* for April 1884.) Should not this old regulation of the Panjab Civil Code, which is older than the Institutes of Manu, be revived for all India?

† Relief has been granted to *men* deserted by wives who have changed their religion, but not as yet to *women* placed in exactly similar circumstances.

way of holding property or a position that has a money value; if simply because she is a widow she loses status and privileges, her wrongs should be redressed; she has the right to complain; and every facility should be afforded her for so doing. The abolition of *satí* by government left the widows' cause incomplete. One of Her Majesty's surgeons, a native of India, Dr. D. N. Paruk, has lately declared that the Hindu widow is far worse off than a prisoner in a criminal jail.* The enabling Act XV of 1856 does give the widow a legal right; but practically, owing to the oppression of caste, it is a dead letter, and needs to have its provisions remodelled so as to afford greater facilities for re-marriage. Considering too that the whole position of the Hindu widow rests on the idea that she still belongs to her deceased husband, unchastity in such an one virtually amounts to adultery—an act, which if logically followed up, should disqualify her from holding property inherited from her husband. At present, according to the Act of 1856, such property is forfeited only when an unchaste widow prefers chastity by re-entering the holy state of matrimony! And surely with every woman the right of remarriage should be left to the woman herself; though the secluded condition of the Indian widow scarcely permits of her making such a choice. The liberty to do so is only just and generous, and prevails in all enlightened lands. A glance at the statute books of most countries soon shows which sex made the laws; but the modern world has already added this article to its fast widening creed, *viz.* that the same freedom of action which men claim for themselves must be granted to the other sex. The present treatment of the Hindu widow is a crying shame on Hindu society, and utterly unworthy of the progress the country has already made. In England, a widow, instead of being under the ban, is always treated with peculiar tenderness and respect.

But whatever may be done directly and at the outset by the people and by the Government—and legislation, while going with the people, has always been in advance of them—it must be rather by *indirect* means that these evils will ultimately pass away. What, for instance, can the weak girl-wife and girl-widow do in the face of the forces against them? And what *will* they do as long as they are ignorant of their degradation, and often willing victims of the tyranny of custom? though, as the "Hindu Lady" says: "do not think that our misery is light because we are inured to it," or

* The *Indian Messenger*, Oct. 19, 1884.

because "we do not complain."* "Do not think that we are satisfied with the life of drudgery that we live, and that we have no taste for and aspiration after a higher life."

Although we are far from saying that the country should wait till the people are educated, before anything is done, we yet look to female education as our greatest help in the complete solution of all these social problems. As long as the women of India are kept in ignorance, purely for selfish ends, they will remain the meek subjects of oppressive and cruel customs.* The doors of the zenanas must be opened, and light and truth penetrate the gloom and error of the female mind. It is simply impossible that they can be left behind, while all others are advancing. They must come to know their rights. Let the women feel that they have minds and souls equally with the men, and they will begin to protest against the disgrace and the effacement they have endured for centuries; against what they must sooner or later come to understand is a profanation of the sacred rights of womanhood. The higher education of women, such as is now afforded in the High School for Girls at Poona, is a step in the right direction.

Side by side with this reform, now happily setting in, there must be a greater relaxing of the rules of caste, and consequently less excuse for early marriages. Whatever necessity may have formerly existed for a division of the community into castes, it is very clear that the four castes do not now restrict themselves to their original avocations. So far as occupation goes, these castes have no longer a separate existence. Brahman, Kshatriya, Vaisiya, and Sūdra, are now met with in the same offices and courts, doing precisely the same kind of work. Mr. P. Ranganatha Mudaliyar of Madras, in an address delivered in connection with the National Indian Association, said that the Mudaliyars of Madras were divided into as many as fifty sections, no one of which could intermarry with any other; that Mudaliyars, Nayadus, Pillais, and Reddis were so divided and sub-divided that parents had to arrange marriages among the members of fifty or sixty families—a choice so limited that physiological and social evils must inevitably ensue. As long as men only marry within their own caste, and frequently only within sub-divisions of their caste, the supply of wives must be limited, the area

* A young man lately remarked, with all the airs of a lord of creation, "Educate my wife! then she would no longer remain in subjection." What a condemnation of early marriages, when, in order to maintain the practice, girls must be denied their right to knowledge, and be kept in the position of a slave!

of selection narrow. Parents will be anxious to secure a particular damsel while she is within reach, and before another suitor appears on the scene; or they may be obliged to accept the only one available, no matter what physical or moral blemish there may be.

But education and the mitigation of caste rules are not enough. The tone of morality in the country needs to be raised. The practice of child-marriage casts, as we have seen, a most damaging reflection on the morals of Hindu society. It is the mark of a low state of civilization; of an unhealthy relation of the sexes. Let a higher morality set in; and then, as the people find that girls can grow up to the age of motherhood without danger; when the most unprotected girl can say of men, in the words of Spenser,

> "That all the time he by his side her bore,
> She was as safe as in a sanctuary;"

there will no longer be need of the unnatural safe-guard of child-marriage. It is because this weak point in the national life is not realised; because this high sense of morality does not exist, and is not really yearned for by the people generally, that this great question is not taken up with the seriousness it deserves; does not press as a burden and responsibility upon the educated mind.

But whence is this higher tone, this moral regeneration to come? History abundantly shows that where the religious principle dies out, the moral law relaxes. One of the greatest reformers of modern times—Keshab Chandra Sen—grasped this vital truth, that all national reform must rise on a religious basis. And Mr. M. G. Ranade, a Brahman gentleman of Poona, and recognised as one of the ablest Indian thinkers, has recently stated his deliberate conviction, that it is only a religious revival—not of forms, but of sincere earnestness—that can furnish sufficient moral strength to work out all these complex problems. "The truth is," he says, "that society has lost its power of life; it can initiate no reform, nor sympathise with it." In a community so spell-bound as the Hindu is, by authority and custom, it requires something stronger than considerations of expediency and economy, to nerve the feeble arm for noble undertakings. Without the inspiration of religion, self-sacrifice and persecution cannot be encountered for any length of time. The Hindu nation needs a higher help—the help of God—to descend into its weakness, to direct it in its difficulty, and to inspire it to carry through the work waiting to be done. It needs to catch the *spirit*—not necessarily the *forms*—of that religion which is the hope of our poor humanity; which is death to all deep rooted

evils and social wrongs; which is the pioneer of progress and civilization; which produces the highest morality, the broadest philanthropy, the deepest charity; which smiles on childhood, and befriends the fatherless and widows; which preaches good tidings to the poor; which heals the brokenhearted; proclaims liberty to the captives; recovery of sight to the blind; and the opening of the prison to those that are bound and bruised.* It need not imitate its forms, but it will surely find it helpful to imbibe something of the 'sweet reasonableness' of Christianity—that which has done so much for the West; to view the national problems in its light; and to work out, in the nation's own way, a national development, under its inspiration.

T. E. SLATER.

A TELUGU NOVEL. †

Surrounded on every hand by the natives of a foreign land and brought into contact with them in a thousand ways, as the Anglo-Indian denizen is, it is astonishing how little he really learns of their religious customs and domestic habits, of their modes of thought and motives to action. The barriers of race, caste, and religion, between him and them, are barriers of steel—slowly corroding now, it is true, but still strong enough to effectually prevent that reciprocity of feeling which is the precursor of familiar acquaintance. The fault is not, however, to be laid wholly at the door of the Hindu people. Pride of birth, rigidity of backbone, cares of office, or indolent indifference on the part of the Englishman in India, too often go far towards compassing a result charged wholly and unjustly to the semi-innocent son of Ind.

On the other hand, the extreme privacy of the Hindu family circle, and the seclusion of all domestic life within four walls bristling with jagged caste prejudices and barred as to their doors with the ponderous bolts of ancient usage, render next to impossible any deep or correct insight into that citadel of the people, the home. In the home hangs the key to their minds and hearts and lives. And since the foreigner is rigorously excluded from this *sanctum*

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* Luke iv. 18.

† *Rajasekhara or the Moonlight of Instruction;* a Telugu Novel, by Kandukuri Virasalingam, Telugu Pandit, First Grade Government College Rajahmundry, 1880.

sanctorum, it is evident that our knowledge of its economy and life must come from within. Hence any work which purports to paint, for instruction or amusement of outsiders, life as it is lived in this impenetrable family circle, should be hailed with special favour. For the purposes of such a revelation the novel, and above all the novel of manners, is peculiarly adapted. 'A tale of manners to be interesting,' says Scott in his admirable introduction to *Waverley,* 'must either refer to antiquity so great as to have become venerable, or it must bear a vivid reflection of those scenes which are passing daily before our eyes and are interesting from their novelty.' The Hindu novelist enjoys the double advantage of depicting venerable antiquity present but hidden to all eyes save his own, and of existing in the very focus of that mirror of whose reflection we catch but an occasional tantalizing gleam.

Such a work is the Telugu *Rajasekhara,* written by the talented supporter of the Brahmin Widow-remarriage Movement. The design of the work is well expressed in the supplemental title *The moonlight of instruction.* It is gently didactic; but the teaching is that of an adept—radical without seeming so—cutting deeply and effectually with the least possible pain and inconvenience to the patient. The story is a revolution of the wheel of fortune carrying with it the hero, a Vaishnava Brahmin.. The plot is simple, yet sufficiently elaborate to admit no inconsiderable variety of incident. Its description of Indian scenery is charming; while it deals with typical individuals and situations in a manner singularly free from artificiality and exaggeration. Written by a native gentleman of refinement and education, the book is pure and invaluable as an impartial study of native character as seen by native eyes. All the live social questions of the day in India are treated of. The subject position of women, and their education; the inhuman treatment and wretched condition of widows; the quackeries of native charlatans, the consequent sufferings of the sick, and the opening thus presented for trained physicians of both sexes; child marriage with all its heartless intrigue and unnatural horror; and the remarriage of unfortunate child-widows—are treated powerfully and with enlightened good sense. The author's wit is double-edged, incisive, and fearless. He tilts at innumerable superstitions, at idolatry, at the astounding gullability and the unfathomable deceit of the native character. Belief in demonology, fortune-telling, oracles, divination, astrology, and fate, is scathingly dissected. That 'admirable compound of folly and knavery called the world,' is well depicted

from a Hindu point of view. Huge self-conceit and reeking 'pride of grease' are humbled in the dust.

But the tale is of special value as the 'open sesame' before which the door of the Hindu abode flies back. Here we have revealed the complete inner life of a representative native family—their house, dress, food, worship, modes of speech, joys and sorrows, loves and hates, hopes and fears; their simple, unquestioning piety; the secluded quiet of their existence; their calm stoicism, and unmurmuring resignation to fate. In a word, the tale unlocks the street door, introduces us to the inmates, shows us over the house and makes us feel quite at home notwithstanding the strangeness of the surroundings.

It is the purpose of this brief introduction to say just so much as shall be sufficient to excite the reader's curiosity, and to indicate the general tenor of the tale, and no more. The author's mode of laying his scene, drawing his characters, and managing his adventures may be ascertained from the writer's translation, of which the first chapters will appear in the February number of this Magazine. The book was first taken in hand by the translator as a part of his course in Telugu reading; then rendered into English from a conviction of its value as an accurate and vivid presentation of native manners and customs, and not for any special interest attaching to the work as a novel. It is now presented to the public not as *the*, but as *a* translation; imperfect in many respects, yet conveying in some small degree, it is believed, the peculiar power and charm of the original.

J. Robert Hutchinson.

METEORS.

The subject of Meteors is one on which so much has been written that it is useless to hope that we can say anything new, but still the paragraphs and articles that have recently appeared in many papers show that it is by no means superfluous to give some account of what is really known about these very interesting bodies. Throughout this article the word Meteor will be used in the restricted sense in which it is popularly employed, and not in the wider sense in which Meteorologists use it.

That is, it will be used as including the more special names of shooting or falling stars, bolides, Meteoroids and the like. The names bolide and Meteoroid are usually confined to the larger Meteors, or to those which actually reach the earth, while those which may be seen any clear night flashing out, for often not more than a fraction of a second, are called shooting or falling stars. As we will see farther on there is no reason to believe that these differ from each other in anything except size, still it will be well to speak first of some of the more remarakable examples of the former class.

For long there was great scepticism felt by scientific men about the alleged fall of stones from space, but this was finally removed by the investigation carried out by Biot, at the request of the French Academy, of the circumstances connected with the fall of a shower of Aerolites near L'Aigle in 1803. The general phenomena connected with the fall of these bodies are much the same in all cases and will be best described by reference to a particular case. A very good example is one given by Professor Newton.

"On the evening of the 2nd December 1876, persons in or near the State of Kansas saw, about 8 o'clock in the evening, a bright fire-ball rising from near where the moon then was in the Western sky. It increased in brilliancy as it proceeded becoming so bright as to compel the attention of every one who was out of doors. To persons in the Northern part of the State the Meteor crossed the Southern sky going to the East, to those in the Southern part it crossed the Northern heaven. To all it went down near to the horizon a little to the North of East, the whole flight as they saw it occupying not over a minute.

The same meteor was seen to pass in nearly the same way across the heaven from West-South-West to East-North-East by inhabitants of the States of Nebraska, Iowa, Missouri, Wisconsin, Illinois, Michigan, Kentucky, Indiana, Ohio, Pennsylvania and West Virginia. But besides this there were heard near the meteor's path, four or five minutes after its passage, loud explosions like distant cannonading or thunder, or like the rattling of empty waggons over stony roads. So loud were these that people and animals were frightened. East of Mississippi river these explosions were heard everywhere within about 60 miles of the meteor's path; in Bloomington, Indiana, sounds were heard supposed to come from the meteor even at a distance of nearly 150 miles from it. Over central Illinois it was seen to break into fragments like a rocket, and over Indiana and Ohio it formed a flock or cluster of meteors computed to be 40 miles long and 5 miles broad. The sky in New York State was wholly overcast. Persons in Ohio and Pennsylvania, who from their situation could look over the cloud last, saw the meteor passing on Eastward over New York. From many places in the State itself came accounts of rattling of houses, thundering noises, and other like phenomena, which at the time were attributed to an earthquake.

At one place in Northern Indiana a farmer heard a heavy thud as of an

object striking the ground near his house. The next morning he found on the snow a stone of very peculiar appearance weighing three quarters of a pound, which from its character there is every reason to believe came from the meteor. By putting together the various accounts of observers, the meteor is shown to have become first visible when it was near the North-West corner of the Indian territory, at an elevation of between 60 and 100 miles above the earth. From here it went nearly parallel to the earth's surface and nearly in a right line, to a point over central New York. During the latter part of its course its height was 30 or 40 miles. It thus traversed the upper regions of the air through 25° of longitude and 5° of latitude in a period of time not easily determined, but probably about two minutes. A part of the body may have passed on out of the atmosphere, but probably the remnants came somewhere to the ground in New York, or further East."

The excuse for this lengthy quotation must be that it gives us a good starting ground, for this meteoroid, though exceptional in some respects, is thoroughly typical, and illustrates most of the points that we will have to discuss. It will be convenient to make the assumption here that a meteor is a solid body moving through space, which through its own motion and that of the earth is brought so near the latter as to pass through its atmosphere. This will enable us at once to account for its luminosity, for a solid body rushing through the air with a great velocity must have its temperature enormously raised. The actual velocity attained by meteors is not known with much accuracy, for it is easy to see that there are many difficulties connected with its determination. If we take the case of the meteor described above, we see that its velocity could have been determined had observers at different places taken accurate observations of the time when it was seen. But what probability is there that any given meteor will be seen by even two trained observers, at some considerable distance apart, who have the means at hand of accurately determining the time? Still, fairly satisfactory estimates have been made in certain cases and it is found that while the velocities may vary very greatly they seldom fall below 8 to 10 miles a second, or exceed 40 to 50 miles a second, while the average is probably about 30 miles. Now it can be shown, both theoretically and experimentally, that if a body be moved rapidly through the air its temperature will be raised, and calculation shows that the heat generated by this means is quite sufficient to account for the observed phenomena. Joule, for instance, has calculated* that if a stone of the size of a six inch cube were to enter the atmosphere at the rate of 18 miles per second, the atmos-

* Joule's Scientific Papers p. 287.

phere being one hundredth of its density at the earth's surface the resistance offered to its motion would be 51,600, lb., and if the stone were to traverse twenty miles against this resistance sufficient heat would be thereby developed to raise the temperature of 6,967,980 lb. of water 1° F. Of course the greater part of this heat would be communicated to the air, but if the stone were to get even one hundredth part it would still be amply sufficient to drive it all into vapour. If the stone were of a larger size the friction against the air would diminish its velocity before the whole of the stone could be raised to a very high temperature and hence, while the smaller meteors are completely dissipated, the larger ones reach the surface of the earth. Even the larger meteors may often be completely dissipated before they can pass through the atmosphere, for the sudden raising of the outside to an enormously high temperature usually makes the meteor break up into a number of fragments, thus producing the explosions so often observed and giving rise to some at least of the sounds which are heard. It will be seen that the atmosphere thus acts as a shield to protect the earth from these wandering bodies which would without it be a constant source of danger. As Dr. Joule* well put it :—

"I cannot but be filled with admiration and gratitude for the wonderful provision thus made by the Author of nature for the protection of his creatures. Were it not for the atmosphere which covers us with a shield, impenetrable in proportion to the violence which it is called on to resist, we should be continually exposed to a bombardment of the most fatal and irresistible character. To say nothing of the larger stones, no ordinary buildings could afford shelter from very small particles striking at the velocity of eighteen miles per second. Even dust flying at such a velocity would kill any animal exposed to it."

Of the meteorites which actually reach the earth only a very small proportion are ever found. During the last fifty years some six or eight per annum have been obtained for known collections and it would be rash to attempt to form any opinion of how many really fall to the earth. But we can make a more trustworthy estimate of the meteors which reach the atmosphere and become visible as shooting stars. Calculating from observations made by Dr. Schmidt, it may be shown that as the earth moves through space it encounters about 30,000 meteors in each volume of space equal to the volume of the earth, or speaking roughly that each meteor is about 250 miles from its next neighbour. In other words

* Loc. cit. p. 288.

not less than twenty million meteors enter our atmosphere daily, though of course most of these can be seen only during dark, clear nights. It is an interesting fact that dust coming, apparently, from these bodies is found in considerable quantities on the snow and ice of the far north. This dust has been recognized as having a cosmic, and not a terrestrial origin, from its chemical composition which resembles very closely that of blocks of undoubted meteorites. Hitherto no minerals unknown on the earth have been found in meteorites. The three most important elements found in them are those which are also most common on the earth, Iron, silicon and oxygen, but the iron is usually united with nickel. The discovery of carbon in forms which seemed to point to an organic origin led Sir William Thomson in his address to the British Association to suggest that life might have been brought to the earth in a germ carried in a crevice of a meteor,* and however little we may be inclined to accept this suggestion, we cannot overlook the importance of the existence of organic compounds in bodies which certainly did not have their origin on the earth.

Many of the meteorites consist almost exclusively of iron combined with nickel and there seems to be little doubt that in ancient times, before the metallurgy of iron was well understood, such masses were used for making iron weapons and were looked on as special gifts from heaven. The emperor Jehangire is said to have had a sword made for him from a mass which fell at Jahlinder in 1620, but the iron is not really well suited for such a purpose. An aerolite which fell at Ensisheim in Alsace on Nov. 7th 1492 was preserved, as a relic, in the Cathedral till the time of the French Revolution. Now-a-days, in most countries, a museum and

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* It was Sherriff Nicholson we think who, at the "Red Lion" dinner, described the suggestion in these lines :—

To the Grecian sages charming,
  Rang the music of the spheres.
But voices more alarming
  Salute our longer ears ;
By science bold we now are told,
  How life did come to pass—
From world to world the seeds were hurled
  Whence sprang the BRITISH ASS !

In our waltzing through creation,
  We meet those fiery stones
That bring for propagation
  The germs of flesh and bones ;
And is it not a thrilling thought
  That some huge misguided mass
Will some fine day, come and sweep away
  Our dear old BRITISH ASS !

not a church is supposed to be the proper place to receive the fragment of a meteorite, but in India the priests still lay claim to them. Thus in the case of a meteoric stone which fell on the 16th of August last at Sabetmahet in the Gonda district of Oudh,

"The stone was brought in from Balrampur piously wrapped in a cloth and carried by Brahmans. It was decked wich flowers and it had been daily smeared all over with ghee which made the smooth exterior look quite the colour of iron, and it had been subjected to frequent puja and coatings of sandal wood powder. . . . The villagers, where it fell, had started a subscription to build a shewala over the aerolite which was looked upon as a Mahadeo, and the Maharani with her accustomed liberality had promised money assistance for the construction of the shrine . . . . In the present instance I can very clearly see that to take this aerolite from the superstitious villagers who have obtained possession, and who have for days been doing puja to it would cause to them the most profound disappointment and sorrow. I believe, too, the Maharani on whose estate it fell having evinced her superstitious sympathy by giving a money subscription would with the people feel hurt if the aerolite were appropriated by the Government."*

Amongst the largest known meteorites are one weighing 1,680 lb. in the imperial museum at St. Petersburg, one in the Yale College Museum weighing 1635 lb. and one in the British Museum weighing about 5 tons. A number of masses of iron, the largest of which weighed about 20 tons, were found by Baron Nordenskiöld in 1870 on the shore of Disco Island and were by him supposed to be of meteoric origin. They possessed a chemical composition similar to that of undoubted meteors, and when polished and acted on with acids they showed the characteristic markings known as *Widmannstätten figures,* but it is now generally admitted that they have had a terrestrial origin. Some meteors just before reaching the ground have broken up into an enormous number of fragments which have been scattered over a considerable area. Thus the L'Aigle meteor broke up into a cloud of fragments of which upwards of 2000 were found scattered over an area seven miles long and three miles broad. The heaviest fragment weighed 17½ lb., the smallest only a few drachms.

Hitherto we have been discussing only such meteors as appear singly and at comparatively rare intervals, and we have seen that on ordinary occasions, the actual number entering our atmosphere every day is very great, yet an experienced observer would be able to see on an average only about fourteen every hour. But on some

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* *Records of the Geological Survey of India, Vol. XVIII. p. 237.*

occasions, as on the 27th of November last, the sky seems to be filled with these bodies and we have what is called a meteor shower. Many such showers have been recorded in History, but two quotations will be enough to show the general impression produced on those who saw them.

"In the year 286 [of the Hegira] there happened in Egypt an earthquake on Wednesday the 7th of Dhu-l-Ka'dah, lasting from the middle of the night until morning; and so-called flaming stars struck, one against another violently while being borne eastward and westward, northward and southward, and no one could bear to look toward the heaven on account of this phenomenon."

"In the year 599 [of the Hegira], on the night of Saturday, on the last day of Muharram, stars shot hither and thither in the heavens, eastward and westward and flew against one another like a scattering swarm of locusts, to the right and left: people were thrown into consternation, and cried to God the Most High with confused clamour."

The greater part of the records refer to a shower which was seen in October or November and Prof. Newton has drawn up the following table* showing the exact dates on which they occurred.

Oct. 13, 902.	Oct. 17, 1101.	Oct. 28, 1602.	Nov. 13, 1833.
Oct. 15, 931.	Oct. 19, 1202.	Nov. 9, 1698.	Nov. 14, 1866.
Oct. 14, 934.	Oct. 23, 1366.	Nov. 12, 1799.	Nov. 14, 1867.
Oct. 15, 1002.	Oct. 25, 1533.	Nov. 13, 1832.	Nov. 14, 1868.

The change of 12 days in the 17th Century is due, of course, to the change of reckoning from the old to the new style. An examination of this table shows that these showers occurred at intervals of one-third of a century and on a fixed date of the year, but that this date moved on uniformly at the rate of about one month in a thousand years. Neglecting for the present this slow change let us see how the periodicity can be accounted for. At the same day of each year the earth is at the same point of its orbit and hence the meteor cloud must always be met at the same position, but since we do not meet them every year it is evident that the meteors must themselves be moving in an orbit round the sun and that we have a meteor shower only when the earth and the meteor swarm arrive simultaneously near the same point. Calculations made by Professor Adams upon the data collected by Professor Newton showed that the November meteors could be completely accounted for by the existence of a stream of meteoroids travelling round the sun in nearly parallel orbits which stretched out beyond the planet Uranus, and having a common period of about thirty-three and a quarter years. The velocity in their orbit is about 26 miles per second, and since

* Encyclopædia Britannica IXth. Ed. s. v. "Meteor."

they move in a direction contrary to that of the earth their velocity relatively to the earth is about 44 miles per second. One of the observations that led up to this conclusion was that when the directions of motion of these November meteors were noted it was found that they all diverged from near the star Gamma Leonis.

A little consideration will show that this can be explained only by supposing that they are moving in parallel orbits and that this "radiant point", as it is called, is the vanishing point for these parallel lines. Of course the lines as we see them are not the real lines of motion but the projection of these against the celestial sphere. If any of the meteors were to come directly towards us they would not appear to move at all but would seem to remain stationary at the radiant point, while all others will appear to diverge from it. The November meteors are known as the *Leonids* from the position of the radiant point in Leo. The position of the radiant point evidently gives us a means of determining the direction in which the meteors are moving and hence, taken along with other data, of calculating their orbits. In the case of the Leonids the slow change of date to which we referred and which is due to the perturbations produced by the attractions of the planets, enabled Adams to decide between several otherwise possible orbits. The velocities of the meteors are all nearly the same but from various causes, such as explosions or impacts, slight differences will exist the result of which will be to spread the stream of meteors over a constantly lengthening portion of the orbit. Thus we find that in the case of the Leonids the most advanced members of the group are six or eight years ahead of the hindermost, so that we see a certain number of meteors belonging to this group both before and after the year of the maximum display. The thickness of the stream of the Leonids is less than a ten thousandth part of its length, while the density is probably such that individual meteors are from 20 to 30 miles apart.

This discovery of a definite orbit for these meteors was quickly followed by another not less important. Soon after Prof Adams had published the results of his calculations of the orbit of the meteors it was found that the orbit of the small periodic comet 1866 I. (Temple's comet) was almost identical with it and that, in fact, this comet must be considered as forming part of the group. This opinion was farther confirmed by the discovery of a small comet (comet 1862 III.) with an orbit coincident with that of the August Meteors known as the Perseids.

Perhaps, however, the most remarkable confirmation of this hypothesis is that supplied by Biela's comet and the meteor showers of Nov. 27th, 1872 and 1885. The history of this comet has a very special interest in all investigations on meteors. It was first discovered in 1772 by Montaigne at Limoges and was seen also by Messier, but was soon lost sight of. In 1805 it was re-discovered by Pons on Nov. 10th and was seen without a telescope by Olbers on Dec. 8th. It was next discovered by Biela on Feb. 27th, 1826 and sufficient observations were made to enable its orbit to be calculated. It was then found to be moving in an ellipse and was identified with the comets of 1772 and 1805. In 1828 Olbers called attention to the fact that it would pass within 20,000 miles of the earth's orbit, but pointed out that there was no risk of any collision, since the earth would then be a month distant from the point where the orbits cross. Its return was predicted for 1832 and it actually reached perihilion within 12 hours of the calculated time. Its next return was due in 1839, but being badly situated for observation it was not seen. Its next return was in 1845, and when first seen it presented the appearance of a slight nebulosity, almost circular, with a slight condensation towards the centre. It gradually became elongated and by the end of December it had split into two distinct bodies. These two bodies travelled together for more than three months, the maximum distance between their parts being about 160,000 miles. On the return of the comet in 1852 there were still the two parts but now they were at a distance of one and a quarter million miles from each other. This was the last that was seen of the comet, but its history is by no means complete. On November 27th, 1872 there was a brilliant meteor shower having a radiant point in Andromeda, which would be the radiant point for meteors travelling in the same path as Biela's comet. Noting this, Professor Klinkerfues of Göttingen telegraphed to Madras to Mr. Pogson.

"Biela touched earth on 27th Search near Theta Centauri"

This telegram was received on November 30th but the mornings of December 1st and 2nd were overcast. The weather on the 3rd was still unfavourable, but Mr. Pogson was able to make some observations through breaks in the clouds and almost at once found a small body which he had just time to prove to be a comet before the clouds closed up again; next morning the comet was again found and good observations were obtained. There was no opportunity of getting a third set of observations and so its orbit

could not be calculated, and though it was at first admitted to be a part of Biela's comet many astronomers now suppose that it was not it but another body travelling in the same orbit, for the body observed by Pogson was two months behind the computed position of Biela's comet. The recurrence of the meteor shower in November last confirms the supposition that the shower of 1872 was due to a meteor stream travelling in the same orbit as Biela's comet.*

This brings as now face to face with the most difficult question of all, what is the real connection between comets and meteors? At one time it was supposed that comet's tails were clouds of meteors, but though this hypothesis is sufficient to account for many of the phenomena observed, it will not account for all, while some are directly opposed to it. In fact, most astronomers now believe that a comet's tail is, mostly at least, gaseous or purverulent and that we must look elsewhere for the origin of meteors. That meteors and comets have some connection is undoubted and the most probable hypothesis seems to be that meteors are the debris, if we may so say, of exploded comets. Suppose a large comet were to be broken up into a number of fragments these fragments would still travel in orbits closely resembling that of the parent comet, but parts would go on ahead and other parts would lag behind. As we have seen in the case of Biela's comet, the idea of a disruption taking place is by no means absurd, and if we consider the enormous changes in temperature to which a comet is subjected as it moves round its orbit, now almost grazing the sun's surface, now in the cold space beyond the farthest planet, we need have no difficulty in understanding that this is one possible cause for such a disruption. Another possible cause has been pointed out by Prof. Peirce who has shown that in the case of the comets of 1858, 1860, and 1843, the tidal forces generated by the near approach to the sun, must have torn the nucleus to pieces had it been of anything less than metallic density. The comet being once broken up the

* Mr. Pogson's observations of this body deserve more attention than seems hitherto to have been paid to them. They were published in the *Astronomische Nachrichten* vol. 84, *p.* 183. The first observation was made in brightening daylight with fleeting clouds, yet in the four minutes available four measurements were made, which were sufficient not only to prove that it was a comet moving rapidly towards the sun, but also to enable Mr. Pogson to determine the motion so satisfactorily that he was able to pick it up at once next morning, though it had then moved a considerable distance from its former position. One cannot help wishing that Prof. Challis of Cambridge had made a similar rapid determination of the object which he saw on August 12th, 1846 and so secured to Adams the priority of the discovery of Neptune. Mr. Pogson, we may add, is still convinced that the comet which he observed was a piece of Biela's comet.

parts would gradually be separated more and more widely and in course of time would probably become scattered uniformly over the whole orbit. This seems to be what has happened in the case of the Perseids from which we get a display about the 10th of August in each year. The comet which moves in the same orbit has a period which has been estimated at 124 years, yet it is doubtful if there is any reason to believe that the meteoric display is any more brilliant one year than another. In the case of the November meteors, on the other hand, we have seen that though the meteor cloud is a very elongated one yet it is by no means spread uniformly round the orbit. There seems good reason to believe that the comet from which the Leonids sprang was drawn into our system at a comparatively recent date by the attraction of Uranus, close to which it passes. Leverrier, indeed, attempted to calculate the epoch a which this happened and fixed upon the year 126 A.D., but the data at present available are not sufficient to justify such a conclusion. One other point of interest about meteors is the possibility that some of those which we see, have become satellites to the earth. We know that in certain cases a meteor passes through the upper part of the atmosphere without either falling to the earth or being dissipated and it seems extremely probable that in some cases the earth's attraction so modifies their orbit that they thereafter revolve round the earth instead of the sun. Such satellites would of course be very near to the earth and would move with an enormous velocity, completing a revolution in a few hours. M. Petit, Director of the Observatory of Toulouse believed that he had seen one body of this kind several times, and calculated that its period of revolution was three hours and twenty minutes and that its orbit lay at a distance of about 5,000 miles from the earth's surface.

We fear that this article has been drawn out to too great a length, by a process similar to that taking place in a cloud of meteors, but the subject is a fascinating one and the temptation to diverge to allied topics is too strong to be always overcome. As it is we have left many points untouched but, perhaps, enough has been said to excite the interest of readers and to lead them not only to study the subject but to observe the phenomena for themselves, which is still more valuable.

C. Michie Smith.

ETHICAL FRAGMENTS OF TAMIL POETRY.

TRADITIONALLY ASCRIBED TO OUVVEIYAR.

Estimates.

As but a straw, the generous count their gold ;
A straw—no more, all heroes reckon death ;
As straw, wise men count women's charms, extolled ;
'A King's a straw,' the homeless faquir saith.

On Giving Praise.

Thy friend, when he is absent, fully praise ;
Thy guru everywhere ; thy wife alone ;
Thy children's praise hide in thy heart always ;
And praise a servant when his work is done.

Love's Origin.

Art, gain we by the practice of the hand ;
And Eloquence, by practice of the tongue ;
And Knowledge, by the practice of the mind ;
And Conduct, by each day's repeated act ;
But Kindness, Pity, Love, in us are born.

Rare Things.

Rare is the woman who of love grows weary ;
Rare is the man made lean by fasting sore ;
Rarely, by generous daily giving, hear we ;
Of a rich man at last becoming poor ;
Wounds won in battle, ring shaped stone ;
These among rarest things we own.

The Fruits of Death.

When dies the mother, dies six flavoured food ;
When dies the father, the son's studies end ;
When dies the son, dies our best earthly good ;
When die our kinsfolk, happiness doth rend ;
When friends of youth are gone, what help have we ?
When the gold tali* goes, nought bides save misery.

'The Kural'† in Miniature.

Giving is Virtue ; what you win,
Is Wealth—if gotten without sin ;
Love, constant, and reciprocal

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* At the death of the husband the tali is removed from the neck of the wife.

† Tiruvalluver treats only of the first three of these subjects.

Of two hearts—Pleasure, this we call ;
These three renouncing, worship given
To God ; this, this alone is Heaven.

Of Learning.

' Knowledge an atom is, that's all ;
My ignorance—a world, I call' ;
Says Saraswati, * and doth seek
More knowledge still. That he hath won
All knowledge, who beneath the sun
May vainly boast? O ye, grown wise,
No man, though small as ant, despise.

Against Boasting.

Something each one doeth well ;
But since nest of bird of air,
And of honeycomb the cell
Deftly wrought, ant's palace fair,
Web of spider, cannot be
Ever fashioned by thee,
Of thy skill boast unto none ;
Say not, ' I'm the mighty one.'

Timely Gifts.

Who know the hot sun, best can tell
How precious is the shade ;
Precious to those in sin who fell
Is God's foot as their aid.
The Kural and Nâladiyar
Do Tamil sweetness show ;
And Soman,† to the needy,
Doth precious gifts bestow.

What is Bitter.

Subramanyam, if you ask
' What is bitter' 'tis a task ;
But I answer ; ' Poverty.'
Unto youth if joined it be,
This more bitter seems to me.
Still more bitter, if doth grieve thee,
Fell disease that will not leave thee ;
Worse than this if thou art fated

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* The Goddess of Learning. † A Pandiyan King.

With wife loveless to be mated ;
And most bitter, eating ever
From a hand that loves thee never.

What is Sweet.

Peerless One, with piercing spear,
'What is sweet'; if thou would'st hear,
Sweet it is to be alone
Far from Evil; sweet, I own,
To the God of all to pray.
Sweeter still to worship aye
Joined with good men; them to see
In daytime and in dream, will be
Than all else, more sweet to thee.

What is Precious.

Long speared One, 'What is precious,' askest thou,
Know it is precious to be born a man;
And to be free from bodily defect,
More precious still; than this, if thou dost ask
What is more precious, manhood richly dowered
With knowledge, wisdom, is more precious far;
Yet precious most of all the generous deeds
And piety which good men fill; they gain
The land of the celestials as their home.

G. Mackenzie Cobban.

LITERARY NOTICES.

The Scientific Papers of Sir Charles Wheatstone, D.C.L., F.R.S., published by the Physical Society of London. London: Taylor and Francis, 1879.

This interesting volume of papers has been published, as is stated in the preface, as a tribute to the memory of their distinguished author. The first appearance of some of them marked an era in the history of the subject treated of, and now that our knowledge of these subjects has been so much extended it affords great pleasure to trace the steps by which that knowledge has been attained. On this account we think that all who are engaged in the study of the subjects included in the present volume, must feel that the Physical Society have done a good work in publishing it.

The papers are not arranged in any particular order, but the subjects chiefly treated of are Electricity, Acoustics, Optics and the Physiology of vision. The rotation of the earth is also discussed, and a few papers are devoted to an explanation of cipher writing.

Under the head of Electricity we have a description of the original experiments made to determine the velocity of electricity by means of a revolving mirror, a contrivance which has since been employed very successfully to shew the nature of sound vibrations. Wheatstone drew from the experiments he made the following conclusions :—

(1) The velocity of electricity through a copper wire exceeds that of light through the planetary space.

(2) The disturbance of electric equilibrium in a wire communicating at its extremities with the two coatings of a charged jar, travels with equal velocity from the two ends of the wire and occurs latest in the middle of the circuit.

(3) The light of electricity in a state of high tension has a less duration than the millionth part of a second.

(4) The eye is capable of perceiving objects distinctly which are presented to it during the same small interval of time.

The paper which follows was the Bakerian lecture for 1843, and in it we have an account of several new instruments and processes for determining the constants of a voltaic current. The instruments and processes, as the author says, are founded on the principles established by Ohm whose theory had up to that time not been generally understood and admitted. Before describing the instruments the author gives a short summary of the principal results deduced from the theory of Ohm. In the clearness of expression and preciseness of the definitions we have evident indications of a true scientific mind. Several new words are introduced and defined to give precision to the ideas involved. They were evidently chosen from etymological considerations, a method which has not generally been adopted by other writers on the subject, and consequently very few of the terms suggested by Wheatstone are in use at the present time. After the very fitting introduction indicated, the author proceeds to describe an instrument which he had invented to enable him to vary any interposed resistance, and which he called a rheostat. This instrument is well known to those who have studied the subject but has been replaced by the modern form of resistance box. The standard of resistance used was one foot of copper wire weighing 100 grains.

The process of finding the E. M. F. of a voltaic battery and of a thermo-electric circuit, is explained and four methods are given of finding the resistance of a circuit. Galvanometers were very much more imperfect then than now, but by such instruments as those described here were laid the real foundations of an exact science of electricity.

In a short paper an account is given of an electro-magnetic clock, the

object of which was to enable a single clock to indicate the same time in as many different places distant from each other as might be required. The form of clock described is that in which there is only the indicating portion at the distant station, and which is driven by a battery the current of which is made and broken by the primary clock every second. This system has not been found to work well, and it is now generally admitted that electricity should be employed only to control or regulate, and not to drive the clock.

Two interesting papers are given treating more particularly of the inductive phenomena of submarine cables. In the first of these we have an account of experiments made with the submarine cable of the Mediterranean Electric Telegraph Company. These shewed that the iron envelope of the compound conductor gave rise to the phenomena of induction which occur when the insulated wire is immersed in water. The second paper is on the circumstances which influence the inductive discharges of submarine cables, and in it we have a description of experiments which the author made to determine the influence of (1) The E. M. F. of the battery, (2) The length of the wire, (3) The conductivity of the wire, (4) The diameter of the wire and the thickness of the insulating coating, (5) The insulating material, (6) Temperature, (7) Pressure, on the amount of discharge, and the influence of interposed resistances on the time of charging and discharging.

In a short paper on the augmentation of the power of a magnet by the action thereon of currents induced by the magnet itself, we have the principles underlying the construction of Dynamo-electric machines clearly set forth. The author also points out the analogy between this action and that of the Holtz. Wheatstone's machine was the first actually made on this principle which however was discovered simultaneously and independently by Varley and Siemens, while Hjorth had really anticipated them by eight years, as is shown by a clause in his patent of 1855.

Following this is an explanation of a cause of error very common in electroscopic experiments, *viz.*, the electrification of the experimenter. It is shewn that this is due to friction between his shoes and the floor. There is also a brief notice of the principal results of experiments made on the prismatic decomposition of electrical light.

Under the head of acoustics there are some very interesting papers, and they were no doubt specially interesting when they were first read. A description is given of an experiment which shews the polarization of sound, and the author points out the bearing of this on the construction of many musical instruments. There is a short paper on the kaleidophone which was invented by the author to shew to the eye the orbits described by the points of greatest excursion in vibrating rods. The track of the paths is delineated by a brilliantly luminous point, a method

which has been found most useful in the analysis of the vibrations of the strings of musical instruments.

In a paper on the resonance of columns of air are given the experiments by which the theory of general resonance was first explained, and an explanation of the action of those musical instruments whose power depends mainly on the resonance of a large body of air or of a sounding board.

The next paper is a description of some interesting experiments on the transmission of musical sounds through solid linear conductors, and their subsequent reciprocation. It is shewn that by connecting the sounding boards of two pianofortes in different rooms they may be made to reciprocate each other's sounds so that it is possible for a person to perform to two audiences at the same time. This principle applies to all musical instruments in some degree, and thus the sounds of a whole orchestra might be transmitted. Such an application of the principle is not of much practical importance, but the experiments are interesting as being a step towards the transmission of articulated speech.

Along with the book is given Wheatstone's Harmonic Diagram which was invented for the use of those beginning to study the theory of music. Its chief objects are to shew the signature of any key and to give the progression of that key both in the major and minor modes. It must be of great service to such as have not thoroughly grasped the principles underlying transposition. It also shews the magnitude of the interval between any two notes.

Under the head of optics we have a description of some experiments on the polarization of light and of a polarizing apparatus invented by the author. The principle of it is that the light by which any substance is to be examined is made to pass through the substance after being reflected from a plate of black glass at the polarizing angle. In connection with the polarization of light the author describes his polar clock.

Perhaps the two most important papers in the volume are those on the physiology of vision, in which explanations are given of several phenomena that had hitherto been either unexplained or unobserved. In these papers the principles of binocular vision were first set forth and illustrated by means of the stereoscope a description of which is also given. The phenomena of the conversion of relief and illusions arising therefrom are explained, and in connection with this the action of the pseudoscope.

There are several papers on the interpretation of historical documents in cipher, and a description is given of the cryptograph, a machine invented by the author for cipher writing.

At the end of the volume are a number of excellent diagrams illustrative of the text, and a good index is provided.

Altogether the volume is a very interesting one and enables the reader

to form some idea of the methods pursued by one whose experimental researches have proved of much value to mankind.

THE KURAL OF TIRUVALLUVAR; *with the Commentary of Parimelazagar, and a simple and clear Pathavuray,* to which is added an English translation of the text by the REV. J. LAZARUS, B.A. Author of a Tamil Grammar, an English translation of the Nannul, &c.

That the Kural, the greatest work in Tamil literature is only now for the first time making its full appearance in English is not creditable to Englishmen. It seems to show that a genuine interest in the Tamil people as they have been and are, and in their extensive literature, has been but rare among Europeans who have made South India their home. Happily there have been a few noble exceptions to this general lack of interest, and these are deservedly honoured, but alas! that they are so few. Long ere this the substance and treasures of Tamil literature should have been fully unveiled, we should ere this have known what Tamil can tell us respecting many questions of profound interest. While thankful for every instalment of work tending to this result, we shall cherish the hope that the work which has still to be done in connection with Tamil literature may hereafter progress with greater rapidity.

Heartily as we welcome this new Edition of the Kural, we confess to considerable disappointment in connection with it. The publisher is honourably known for the correct and attractive editions of Tamil works which he has given to the public, so that we naturally expect that no room will be left for complaint in connection with the Kural. But such is not the case.

To begin with, on the English title-page, the only translator's name which appears is that of the Rev. John Lazarus, B.A. In the Preface however the publisher informs us that Mr. Lazarus has translated only the last 70 chapters and that the "translation of the first 63 chapters has been compiled from various sources." We suppose, if the publisher had told us plainly what he means by the term "various sources" that they would really be but one source. In other words, the translation of the first 63 chapters has been copied rather than compiled. Practically the whole of Drew's labours on the Kural have been appropriated by the publisher without a single mention of Drew's name. If the publisher be indebted, as he says, to "various sources" for the translation of these first chapters, we regret that we have been unable to find any sign of such indebtedness. But granting this to be the case, it was surely his duty to acknowledge with all frankness his obligations to Drew and any others who were pioneers in the work of making known the Kural to the English speaking world. And we need hardly say that the publication of Drew's name would in no way detract from the honour due to Mr. Lazarus for the worthy part which he has taken in the translation.

Besides, in furnishing what we suppose was intended to be a standard edition of Tiruvalluvar's work, references to Ellis, Drew and others who have laboured on the Kural would have informed the public generally on matters not widely known, and thus would have greatly enhanced the value of the Edition. In withholding information of this kind from the public, we think the publisher has fallen into an error, for when information is fully and frankly given the publisher deserves and receives respect, and the public, who like to be taken into one's confidence, are saved from doubt and misgiving.

When we turn to the Tamil title page, we find that Murugesa Muthaliar Avergal, of Mylapore has compared several texts of Parimelazagar's Commentary, and this we are glad to know, but we should have been informed as to the number of texts and MSS. which have been compared. We are also informed that a *Pathavurei* has been here supplied, but neither title-page nor preface give any information as to whence it came, as to whether it is old or new, original or borrowed. Has it been constructed to suit the English translation or has the English translation been made to agree with the *pathavurei*? Do translation and *pathavurei* always correspond in meaning? Questions of this kind arise as we sit down to study the work before us, and might have been anticipated by the publisher or Editor.

When we examine the work, we do not find any serious changes made in Tiruvalluvar's text. We are far from thinking that the present text is everywhere perfectly correct, and the best that might be obtained, but the materials are not yet available for its emendation. The commentary of the venerable Scholiast is here and there a little simplified by division of the words, but otherwise it appears unchanged by any emendation. So far as we have compared it, it might have been copied from Drew's Kural or the edition by Arumuga Navilar. The fact is that the statement about the comparison of texts which appears on the title page of Tamil books, is usually only an empty phrase. We do not say that in the present case it is so, but beyond the splitting of words above referred to we have not been able to find any solid result of Mr. Murugesa Muthaliar's labours.

The *pathavurei* which is here supplied for the benefit of the reader has not been specially prepared for this edition. It has done duty in many former editions of the Kural. We find it in the edition of Saravana Perumal Iyer of Conjeveram (1847) in that of Vethagiri Muthaliar of Madura (1848), and also in an edition older than these.

The words of the text as given in the *pathavurei* do not always correspond with the text itself; *i. e.* Stanza 354. here reads.

ஐயுணர் வெய்தியக் கண்ணும் பயமின்றே
மெய்யுணர் வில்லா தவர்க்கு.

The above reading பயமின்றே is found in some copies. But the copy from whence the *pathavurei* has been taken doubtless contained in the text the reading பயனின்றே which is also the reading in the editions mentioned above; *i.e.* of 1847 and 1848. Hence though we have பயமின்றே in the text we have பயனின்றே in the *pathavurei.*

The above remarks will show that though the publisher merits our thanks for having given us a complete edition of the Kural with an English translation, the edition is but of little value from a critical standpoint.

Again, we think that the revision of Drew's translation is a serious mistake. It ought not to have been touched, but should have been published as he wrote it. His translation may not always be perfectly correct, but it is his own, and no man has a right to mar or mend it. Pope's translation of Homer has never been revised, no one would have the temerity to attempt it. Or if such an one could be found, an honest and indignant public would cry 'Hands off!' If a man paint a picture, or write a book, or translate a poem, his work is his own, and the praise or blame which the work merits is his. If other men are dissatisfied with his work, if they think it can be surpassed, it is open to them to surpass it. But unless a man's work become by purchase or otherwise the property of another, his rights must be respected, and his work remain intact. The publisher may be of opinion that Drew's translation can be improved, and may be right, for no man's work is perfect. But if he felt that he could not print his translation as it was, his duty was plain, he should have made a translation for himself.

When we examine the revision of which the preface speaks, we find that many of Drew's renderings have been altered. In the first twenty-four Chapters alone, upwards of one hundred changes have been made, and these changes are of all kinds, good, bad, and indifferent.

The anonymous reviser may be able to improve Drew's translation, but he has not done so, in not a few places he has sadly marred it. Take the following as a few instances of this kind;

Cap. II. 5. கெடுப்பதூஉங் கெட்டார்க்குச் சார்வாய் மற்றாங்கே
யெடுப்பதூ உ மெல்லா மழை.

Drew. 'Rain destroys; on the other hand, helping restores what it has destroyed; rain does all this.'

Revised. 'Rain by its absence ruins men; and by its *existence* restores men to fortune.'

Cap. iii. 6. செயற் கரிய செய்வார் பெரியர் சிறியர்
செயற் கரிய செய்க லாதார்

Drew. 'The great will do those things which it is difficult to do; the mean cannot do those things which it is difficult to do.'

Revised. 'The great will do those things which *is* difficult to be done but the mean cannot do them.'

Cap. vii. 8. தம்மிற்றம் மக்க ளறிவுடைமை மாநிலத்து
மன்னுயிர்க் கெல்லா மினிது.

Drew. 'It is pleasant to all the powerful creatures of the great earth that their children should possess more knowledge than themselves.'

Revised. 'That their children should possess knowledge is more pleasing to all men of this great earth then to themselves.'

Cap. xi. 7. எழுமை யெழுபிறப்பு முள்ளுவர் தங்கண்
விழுமந் துடைத்தவர் நட்பு.

Drew. 'The wise will remember throughout their seven fold births the love of those who wiped away the falling tear from their eye.'

Revised. . . . 'who wiped away their *affliction*.'

Cap. xii. 4. தக்கார் தகவில ரென்ப தவரவ
ரெச்சத்தாற் காணப் படும்.

Drew. 'The upright and the crooked may be known by (the character of) their *offspring*.'

Revised. 'The worthy and unworthy may be known by the existence or otherwise of good *offsprings*.'

Cap. xii. 9. சொற்கோட்ட மில்லது செப்ப மொருதலையா
வுட்கோட்ட மின்மை பெறின்.

Drew. 'Freedom from crooked speech is rectitude if it be accompanied by steady freedom from crookedness within.'

Revised. 'Freedom from obliquity of speech is rectitude if there be (corresponding) freedom from bias of mind.'

Cap. xiii. 3. செறிவறிந்து சீர்மை பயக்கு மறிவறிந்
தாற்றி னடங்கப் பெறின்.

Drew. 'If a man knowing that self control is knowledge, in the appointed way control himself, such self control, known by the wise, will bring distinction.'

Revised. 'Knowing that self control is knowledge, if a man should control himself, in the prescribed course, such self control will bring him distinction among the wise.'

Cap. xiii. 6. ஒருமையு ளாமைபோ லைந்தடக்க லாற்றி
னெழுமையு மேமாப் புடைத்து.

Drew. 'He who throughout one birth like a tortoise keeps in his five senses will obtain happiness throughout the seven births.'

Revised. 'Should one throughout a single birth like a tortoise keep in his five senses, the fruit of it will prove a safe-guard to him throughout the seven fold births.'

Such instances might easily be multiplied, but they are enough. Without saying anything of the merits of Drew's translation, we do not hesitate to affirm that this reviser has only marred it in such instances as the above.

Besides the class of changes above referred to, there is another class still more numerous, consisting of trivial changes by which though the taste of the reviser may be gratified, the general reader can gain nothing. The following stanzas taken from the earlier chapters furnish specimens of this class, *viz.*, Nos. 9, 13, 16, 18, 28, 32, 34, 37, 40, 51, 52, 55, 62, 68, 78, 85, 94, 106, 108, and 109. Such changes as these do not come under the head of revision, they are trivialities which could only appear of importance to a person of defective judgment. In short, they will convince the reader that the reviser has attempted a task for which he was altogether incompetent. Though instances might be given to show that occasionally an improvement has been made yet taken as a whole the revision is not a success. Drew's translation will be preferred, and ought to be. That translation, however, ends with the sixty-third Chapter, and the remainder of the work has been translated by Mr. Lazarus. It is due to Mr. Lazarus to say that he has not meddled with Drew's work, though the title-page and publisher's remarks tends to convey a different impression. We regret that Mr. Lazarus should have undertaken to play any part at all in this medley, yet we are sure that all lovers of literature will feel indebted to him for the good work which he has here done. Drew has said that the Third part of the Kural காமத்துபால் "could not be translated into any European language without exposing the translator of it to infamy," yet in the face of this strong remark Mr. Lazarus has ventured to translate this section as well as the remaining Chapters (forty-seven) of the preceding part. It was well that even the last section should be translated, though it will probably never be translated again, and it may serve the good purpose of disillusionizing some readers who hold extravagant views concerning the ethics of Tiruvalluvar.

As might be expected, the translation by Mr. Lazarus is well and faithfully executed. He has given us with much care and fulness the sense of the original, has generally accepted and followed Parimelazagar and this to Hindu readers will at once commend his translation as excellent. We think however that he has now and then followed far too submissively the interpretation of the commentator. It is true that the commentary of Parimelazagar is a singularly able one, but it is not infallible, and many stanzas are clearly capable of a different rendering from what the commentator gives. Since Mr. Lazarus is an excellent Tamil scholar, we should have expected a little more independence here and there in his rendering. He can translate closely and tersely and is seen at his best when he is independent. Many stanzas might be quoted, as illustrations of admirable translation, *e. g.*

'The measuring-rod of those (ministers) who say "We are acute," will on inquiry be found to be their (own) eyes and nothing else,' (710.)

"What have they to do with a sword who are not valiant or they with learning who are afraid of an intelligent assembly." (726.)

"Who would reproach with failure those who seal their oath with their death." (779.)

"The hero will reckon among wasted days all those on which he had not received severe wounds." (776.)

"It is indeed a gain to renounce the friendship of fools" (797.)

We now quote one or two stanzas to show what Mr. Lazarus gives us when he leaves the text of Tiruvalluvar and translates Parimelazagar.

நட்பிற்கு வீற்றிருக்கை யாதெனிற் கொட்பின்றி
யொல்லும்வா யூன்று நிலை. (789.)

Mr. Lazarus renders thus;

"Friendship may be said to be on its throne when it possesses the power of supporting one at all times and under all circumstances, (in the practice of virtue and wealth)."

We should render Tiruvalluvar's text thus:—

"If you ask where friendship's royal seat is, wherever there is unwavering constancy of mind, there will it be."

இணையரிவரெமக் கின்னம்யா மென்று
புணையினும் புல்லெனு நட்பு. (790.)

Mr. Lazarus translates thus:—

'Though friends may praise one another saying "He is so intimate with us, and we so much (with him);" (still) such friendship will appear mean.'

We should render with Tiruvalluvar, thus:—

'The friendship which says, "They and we are such friends," however showy, is worth nothing.'

நாடாது நட்டலிற் கேடில்லை நட்டபின்
வீடில்லை நட்பாள் பவர்க்கு. (791.)

The following is the translation by Mr. Lazarus:—

"As those who are of a friendly nature will not forsake (a friend) after once loving (him), there is no evil so great as contracting a friendship without due inquiry."

Tiruvalluvar says:—

"Nothing is so ruinous as ill-chosen friendship, nothing so far from ruin as the friendship which is true."

அழச்சொல்லி யல்ல திடித்து வழக்கறிய
வல்லார்நட் பாய்ந்து கொளல். (795.)

Mr. Lazarus renders thus:—

"You should examine and secure the friendship of those who can speak so as to make you weep over a crime (before its commission) or rebuke you

severely (after you have done it) and are able to teach (you the ways of the world.)"

We should render as follows :—

"Seek and gain the friendship of men who know the way of the world, and who will rebuke and make you sorry when you do wrong."

We are of opinion that our translation of these stanzas may be improved upon, yet we have ventured to give it to illustrate the difference between translating the text of the Kural, and that of its excellent commentator. The commentary of Parimelazagar is delightful reading for any one who desires to see how as fine gold Tiruvalluvar's text may be beaten out, or expanded, but the faithful translator must take care to keep to Tiruvalluvar's text. As we have already remarked Mr. Lazarus would have done better justice to the great poet and also to himself had he always stuck closely to the text and not suffered himself to have been overawed by respect for the scholiast. The translation of Tiruvalluvar is not an easy task, his verses are unequalled in their elegance and conciseness of expression, and it is much more easy to discover defects in an English translation, than to reproduce Tiruvalluvar's terseness and beauty. We are therefore thankful for the admirable translation which Mr. Lazarus has given to us, and we cherish the hope that he may hereafter give to the public a complete translation, and a critical edition of Tiruvalluvar's work which shall be worthy of that great poet. We ought to have said that there are some awkward misprints in the work *e.g.* "waxes" for "wanes" which should be corrected in a future edition. But we hope this edition will not be reprinted.

Lessons on Domestic Economy, or Useful Hints to Our Girls, intended for the use of Anglo-Indian and Eurasian schools by E. A. Keely, Lady Principal of Doveton Girls' School. Madras, S. P. C. K. Depôt Vepery. 1885. Price 12 annas.

Miss Keely has been so long and so favourably known to Madras as a successful teacher that all will be glad to see her coming forward to make her teaching available to those who have not the privilege of attending her classes. The subject which she has chosen for this little volume is perhaps the most important to which the minds of "Our girls" can be directed while the treatment is such that none need have any difficulty in following it. To explain exactly what she means by "Domestic Ecomony" the authoress sketches two scenes showing the state of the interior and exterior of two houses, in one of which the girls do and in the other of which they do not know how to keep things tidy. The contrast is a painful one, but we fear the picture is by no means overdrawn. Following this is a chapter on "air" showing the necessity of pure air and good ventilation. Next comes a few words on "Sun and light" leading up to a

chapter on cleanliness in which some very healthy advice is given. The abstract of the chapter given at the end will show the way in which the subject is treated.

"Now what have we learned in this chapter,

1. What dirt is.
2. That we must get rid of it.
3. That every girl must know how this is to be done.
4. That, in order to know this, she must do it herself.
5. The way to do it.
6. How to prevent accumulation, by getting rid of all unused things.
7. That thoroughly doing this, is cleanliness.
8. That personal cleanliness leads to a desire for house or general cleanliness; and that both together are very important parts of the comfort of a home, or of domestic economy."

The next chapter is on water and is good so far as it goes, but we would have liked to have seen it go a little farther. The general statement that water from deep wells is safe while that from shallow wells is unsafe is not quite satisfactory. Water from shallow wells often is perfectly safe while water from deep wells is frequently contaminated. We would like too, to see something added about filters in another edition. The common three chattie filter, when properly attended to, is probably better than any of the patent silicated carbon ones and ought to be found in every house. Chapter V. is on 'Food' and is full of useful hints but we must take exception to two statements. The first of these is "you can no more make good tea with water that has been boiled twice than with water that has never been boiled." Now with all deference to the practical experience of the authoress we cannot believe that any change whatever is produced on water by boiling it a second time. The other point is with reference to the making of coffee. Of course this is a question on which authorities differ, but we think the weight of authority is on the side of those who start with *cold* water not with hot. Here is the receipt given by Frank Buckland as the result of his Winchester experiences :—

"The coffee must be mixed with cold water, it must then be put on the 'dog irons' till large bubbles come to the surface; these must be broken one by one with a piece of stick; a piece of the skin of a sole must then be put into the coffee, it must be allowed to boil up again, and then a small cup of cold water thrown in and the coffee allowed to settle."

Chapters VI and VII are on "Clothing and House Linen" and "Needle Work &c.," will be found useful by many who would hardly like to be classed among "Our girls." Then follows a long and very valuable chapter on income and expenditure which should be read and re-read by every girl who has the prospect before her of setting up a house of her own. If the principles here laid down were acted upon —and there is no reason why they should not be—we would hear of

much less distress amongst the Eurasian community. The last chapter is on "The sick room" and like the others contains much sound practical advice. Altogether the volume is one which we can heartily commend to those for whom it is written. The chief fault we have to find with it is that it is too small, and we hope the author will see her way before long to bring out a larger volume on the same subject. There is much in this one that might be expanded with advantage and there are many subjects which could not well be included in these "Hints" which are worth bringing before the notice of the class for which Miss Keely is writing.

In Southern India. A visit to some of the Chief Mission Stations in the Madras Presidency. By MRS. MURRAY MITCHELL, London 1885.

As the title indicates, this volume has chiefly a missionary interest. Mrs. Murray Mitchell is already well known as an authoress, and the present work, though connected with a different part of the country, resembles in many points, those she has already published. In this volume however she labours under a disadvantage. Hitherto she moved in a circle which she had made her own, the life and the language of the people were familiar, and their customs and habits were before her eyes every day. Now she is giving a description of a brief tour made by her husband and herself in the Madras Presidency noting what appears to every ordinary observer. The account must therefore be somewhat superficial, and of less real and permanent value than it would otherwise have been.

The volume, which is throughout in the form of a diary, opens in Bombay, and after two chapters devoted to Bombay, Poonah &c., begins the description of her tour in South India proper, by a short sketch of their stay in Madras. A few of the chief features of missionary interest are touched upon, more especially the rapid advance in Madras of both male and female education.

"Why Madras has been called the 'benighted Presidency' is always a puzzle to me. At all events it no longer deserves the epithet; for I believe, there is no city in India where education and missionary enterprise have had more success. Female education has made most encouraging progress, and this is always a test of enlightenment and advance."

From Madras Dr. and Mrs. Murray Mitchell passed southward, Chingleput Tanjóre, Dindigal, Madura, and Palamcotta on the eastern side are visited in succession, and the chief features of the work carried on by the missionary bodies are described in a brief but interesting way. From Palamcotta, following the well known route, they passed to Nagercoil, and thence northward through Travancore and Cochin and thence to

the Neilgherries. It is impossible to pass in review the description of each of these places. Much of what Mrs. Mitchell has to tell is of purely personal interest, as is so often the case with works published in this form. But over and above this, the mere narration of the results of Christian effort forms a story of the deepest interest. When we find that in connection with the Church Missionary Society and the Society for the Propagation of the Gospel in South India, there are 100,000 Protestant Christians, and that in connection with the former "the native Christians last year . . . contributed 32,000 rupees towards the work of the Mission," it can hardly be said that Missions have been a failure. "The number has quadrupled itself in twenty years." Writing of the church at Nagercoil she says.

"When I entered I was struck with astonishment, Here was an immense building, certainly the biggest Mission Church we have ever seen, filled throughout—crowded I may say—with as decent and respectable a congregation as you could see at home. The pulpit stood a good way down from the top, with pews arranged in front of it, on either side of a wide passage to the door. These were crowded—the women to the right, the men to the left, while on the floor, round the pulpit, up to the top, and round every pillar the little ones of the flock were set as thickly as they could be put. . . . . . . It was one of the most thrillingly interesting and impressive services I have ever been present at, and stirred our hearts more than I can tell. I would have come all this way, though for nothing else than to see that large congregation of devout, worshipping, intelligent well-to-do, self-respecting people, who support their own pastor and schoolmasters. Besides this they contributed last year 3,000 rupees to the general work of the mission in operating on the outside heathen. The service lasted for two hours and then came the slow retiring of the people—'the skailing of the kirk,' as we should say in Scotland; and this was as fine a sight as any. Many gathered round to shake hands and talk to us strangers; and then we watched the picturesque groups wending their way homeward, the fathers with the little ones in their hands and the women in twos and threes behind. It put me in mind of similar scenes I have watched a hundred times on the hillsides at home generally on a Sabbath-eve, in summer tide; when a solemn communion time had gathered many grave worshippers from far and near, who now that the services were over, and the day far spent were reverently retiring from the moor or glen where the congregation had sat and worshipped,—where they had their feast of fat things during the long summer day.

The West Coast, and especially the Backwater, of Travancore give splendid opportunities for Mrs. Murray Mitchell's pen.

"We are going through a region of exquisite and picturesque loveliness too beautiful to describe. There are woods and waters, lakes and fens, rippling streams and sullen canals, stately and mighty monarchs of the forest, with a tangled under-growth of dazzling, varied, gleaming *shola*, or natural bush. There are tall, wavy grasses, and lovely mosses; gnarled old stems silvered with lichen, or clambered over and clothed with beauty from a hundred differ-

ent delicate fern fronds; there are climbers and trailers and parasites without end, which throw their gigantic arms round strong trees, and then fling themselves about with wanton frolic in loops and festoons, and garlands of endless beauty."

And again,

"I never saw the phosphorescence on the water so glorious as last night. I could hardly lie still for gazing at its changeful beauty. The whole surface of the water sometimes looked like a lake of fire; and as the oars struck, it broke into tiny ripples and whirls of dancing light most curious and beautiful. Sometimes we seemed to go over waves and crests of lights; and then again it broke into curls and twists, as if snakes of fire were pursuing us."

Altogether the volume is an interesting one, and if the view is somewhat rose-coloured, it is yet well adapted for the purpose of enlightening readers on the actual mission work of South India.

NOTES AND EXTRACTS.

In his opening address as President of the Mathematical and Physical section of the British Association, Professor Chrystal called prominent attention to the crying need for some improvement in the methods of teaching Scientific subjects in our schools. He pointed out how important it was for the public good that a certain amount of real scientific knowledge should be widely diffused, and maintained that the methods at present employed were not such as to accomplish this end. The object, he said, which we ought to have in view was not to lead the learner through some devious by-path, but to bring him to an eminence from which he might at least see the promised land. The great difficulty in the way of improvement lay in the nature of the text books and examination papers which practically rule the teachers. Of examinations he said :—

"All men practically engaged in teaching who have learned enough, in spite of the defects of their own early training, to enable them to take a broad view of the matter, are agreed as to the canker which turns everything that is good in our educational practice to evil. It is the absurd prominence of written competitive examinations, that works all this mischief. The end of all education now-a-days is to fit the pupil to be examined; the end of every examination not to be an educational instrument, but to be an *examination* which a creditable number of men, however badly taught, shall pass. We reap, but we omit to sow. Consequently our examinations, to be what is called fair—that is, beyond criticism in the newspapers—must contain nothing that is not to be found in the most miserable text-book that any one can cite bearing on the subject. One of my students, for example, who was plucked in his M.A. examination, and justly so if ever man was, by the unanimous

verdict of three examiners, wrote me an indignant letter because he believed, or was assured, that the papers set by the examiners could not have beeu answered out of Todhunter's Elementary Algebra. I have nothing to say, of course, against that or any other text-book, but who put it into the poor young man's head that the burden lay with me to prove that the examination in question ought to contain nothing but what is to be found in Todhunter's Elementary Algebra? The course of this kind of reasoning is plain enough, and is often developed in the newspapers with that charming simplicity which is peculiar to honest people who are, at the same time, very ignorant and very unthinking. First, it follows that lectures should contain nothing but what is to be found in every text-book; secondly, lectures are therefore useless, since it is all in the text-book; thirdly, the examination should allude to nothing that is not in the text-books, because that would be unfair; fourthly, which is the coach or crammer's deduction, there should be nothing in the text-book, that is not likely to be set in the examination. The problem for the writer of a text-book has come now, in fact, to be this—to write a book so neatly trimmed and compacted that no coach, on looking through it, can mark a single passage which the candidate for a minimum pass can safely omit. Some of these text-books, I have seen, where the scientific matter has been, like the lady's waist in the nursery song, compressed "so gent and sma'," that the thickness of it barely, if at all, surpasses what is devoted to the publishers advertisements. We shall return, I verily believe, to the Compendium of Martianus Capella. The result of all this is that science, in the hands of specialists, soars higher and higher into the light of day, while educators and the educated are left more and more to wander in primeval darkness."

We are sure all teachers in this country who have really considered the question will heartily agree with this. Here, if anywhere, the examination craze has reached a stage which makes it almost unendurable. It is difficult to know how to make things any better still, surely, some mitigation of the evil is possible. Professor Chrystal points to a cure which though slow in its action will be sure in its results.

"The cure for all this evil is simply to give effect to a higher ideal of education in general, and of scientific education in particular. Science cannot live among the people, and scientific education cannot be more than a wordy rehearsal of dead text-books, unless we have living contact with the working minds of living men. It takes the hand of God to make a great mind, but contact with a great mind will make a little mind greater. The most valuable instruction in any art or science is to sit at the feet of a master, and the next best to have contact with another who has himself been so instructed. No agency that I have ever seen at work can compare for efficiency with an intelligent teacher, who has thoroughly made his subject his own. It is by providing such, and not by sowing the dragon's teeth of examinations, that we can hope to raise up an intelligent generation of scientifically educated men, who shall help our race to keep its place in the struggle of nations. In the future we must look more to men and to ideas, and trust less to mere systems. Systems have had their trial. In particular, systems of examina-

tion have been tested and found wanting in nearly every civilized country on the face of the earth. Backward as we are here, we are stirring. The University of London, after rendering a great service to the country by forcing the older universities to give up the absurd practice of restricting their advantages to persons professing a particular shade of religious belief, has for many years pursued its career as a mere examining body. It has done so with rare advantages in the way of Government aid, efficient organisation, and an unsurpassed staff of examiners. Yet it has been a failure as an instrument for promoting the higher education—foredoomed to be so, because, as I have said, you must sow before you can reap. At the present time, with great wisdom, the managers of that institution have set about the task of really fitting it out for the great end that it professes to pursue. If they succeed in so doing, they will confer upon the higher education one of the greatest benefits it has yet received. They have an opportunity before them of dethroning the iron tyrant Examination which is truly enviable. This movement is only one of the signs of the times. Among the younger generation I find few or none that have any belief in the "learn when you can and we will examine you" theory; and small wonder, for they have tasted the bitterness of its fruit. *Laissez faire* as a method in the higher education no longer holds its place, except in the minds of inexperienced elderly people, who cling, not unnaturally, to the views and fashions which were young when they were so."

At the close of last session the Madras Medical College completed the fiftieth year of its existence having been founded by Dr. William Mortimer in 1835. At first it was intended merely for the education of young men for the subordinate medical service and was officered by two teachers and two assistants. Now the College provides instruction for the full course required by candidates for the medical degrees of the Indian Universities and for registrable diplomas in England. The teaching is admittedly of a high standard and the list of the alumni of the Madras Medical College is one of which any institution might be proud. One of the distinguishing features of the College is the encouragement it has given to Female Students, and the appointment of Mrs. Scharlieb, herself a distinguished graduate of London University, as lecturer on Midwifery to the Female class will probably give a distinct stimulus to this branch of the work of the College. Last session there were 182 students on the roll of whom ten were females. As regards the classes of the community to which they belonged, eighty-two were Europeans and Eurasians, forty Native Christians, eight Muhammadans, thirty-three Brahmans, forty-nine Sudras and three Parsees. The results of the University Examinations were favourable. Two former students obtained the degree of M. D. and two of M. B. In addition to these, three students obtained the degree of M. A., two in Biology and one in Physical Science, their preparation for these examinations being

greatly facilitated by the scientific lectures at the College. In his annual report the Principal points out that the College still requires additional equipment in the form of laboratories and museums and expresses a hope, in which we cordially join him, that influential native gentlemen may soon see their way to do something for the more complete equipment of the College.

We referred last month to a movement on the part of some of the old students of the Christian College to aid in the work of restoring the damaged buildings, and we are now able to show how heartily it has been taken up. The following letter addressed by the secretary of the "Madras Christian College Buildings Restoration Fund" to the Secretary of the College Council speaks for itself :—"We have the pleasure to forward herewith a copy of the proceedings of a meeting of the former students of the Madras Christian College and Free Church Institution, held at the Evangelistic Hall on Monday the 14th inst., and to request that it may be laid before the College Council. It will be seen from the above that the former students of the Institution sympathise deeply with the Council in the loss sustained by them and in the inconvenience caused to them by the fall of the new buildings during the late heavy rains, and resolve, therefore, to render their utmost assistance towards their speedy restoration. We are also glad to inform you that they have come forward very willingly and promised pecuniary assistance which up to date amounts to Rs. 1,600. A list is attached showing the names of those who have subscribed. In conclusion we beg to assure the Council that the Sub-Committee appointed for the purpose of appealing for assistance to the former and present students of the Institution and to other gentlemen who sympathise with them, will endeavour to do their utmost to procure some substantial contribution towards the accomplishment of the object in view."

The following are the resolutions passed at the meeting:—

I. That this meeting expresses its heartfelt sympathy with the Madras Christian College Council in the loss sustained by them and inconvenience caused to them by the fall of the new buildings during the late heavy rains and resolves therefore, to do as much as lies in its power in rendering assistance towards their speedy restoration.

II. That a subscription list be opened at once and that an appeal for assistance be made to all the former and present students of the Madras Christian College and Free Church Mission Institution and all other gentlemen who sympathise with this movement.

III. That a sub-committee composed of the undermentioned gentlemen with power to add to their number be formed for the purpose of carrying out the above resolution.

M. R. Ry. T. Aiyakannu Naicker, B.A.
,, E. Balasundara Moodr., B.A.
,, E. Janakiramiah, B.A.
Dr. N. Jesudasen, M.A., M.D.
M. R. Ry. G. Kothundaramayya, M.A.
Mr. J. S. Martyn, M.A.

M. R. Ry. C. Ramachendra Rao Sahib B.L.
,, W. Ramayya, B.A.
,, T. Ramakrishna Pillai, B.A.,
,, P. Ramachendra Rao, B.A.
Mr. P. T. Tharyan, B.A.

Joint Secretaries, Mr. Henry Lewis B.A. and M. R. Ry. M. M. Ramalinga Chettiar, B.A.

Treasurer, M. R. Ry. C. N. Nummiah Chettiar, B.A., B.L.

IV. That a copy of this day's proceedings be forwarded to the Rev. Wm. Miller, M.A., LL.D., C.I.E., Secretary to the Madras Christian College Council for the information of the Council.

The day has now gone when utterances from the Vatican could shake the peace of Europe, yet any speech from that august quarter will still be listened to throughout the civilized world. And certainly this attention will be accorded to the *Encyclical Letter* which Leo. XIII issued on the first of November to the Patriarchs, Primates, Archbishops and Bishops of the Catholic World, on the subject of the Christian constitution of States. In the opening paragraph—in which "The Church" and "Christianity" appear to be identified—the position is taken, in which Protestant and Catholic are at one, that no "better method has been found for establishing and ruling the State than that which springs from the teaching of the Gospel," and the remainder of the letter is occupied with a comparison between Christian doctrine and the new political systems which are beginning to prevail in these days, "the outcome (it is said) of a world now fully developed, and born of a growing liberty." It is shown first of all that there is no power except from God. The State is bound to a "public profession of religion," by the same law which commands every individual to lead a holy life. "States cannot, without a crime, act as though God did not exist . . . . . Above all attention should be paid to the holy and inviolate preservation of that Religion by which man is united to God." Which is the true Religion may be easily discovered. Its proofs are "the truth of prophecy, the multitude of miracles, the rapid spread of the Faith, even in the midst of its enemies and in spite of the greatest hindrances, the testimony of martyrs and the like." It was instituted by Christ and then entrusted by him to His Church to defend and spread. It is that "Divine Society" of which he is the founder, which as it is higher in its aims than the Civil Society, its power is the most exalted of all powers. It is the man's guide to Heaven, to whom "God has assigned the office of watching and legislating for all that concerns Religion, for the teaching of all nations."

This has been approved of in theory and fact by Governors and Princes, who have defended this power of the Church as the best defence of the liberty of the Civil Power itself. The whole human race is thus under two Powers ordained by God, *viz.*, the ecclesiastical and the civil. Each is supreme in its own sphere, yet since the subjects of both are the same individuals, the relation of each to the other and the boundaries of each have to be defined. These are discovered in the nature of the end for which each exists. "Whatsoever in human affairs is in any manner sacred; whatsoever pertains to the salvation of souls or to the worship of God, whether directly or indirectly, all this is in the power of the Church."

A state so constituted in relation to the Church contains nothing that may be said to be "unworthy of the majesty of princes, and so far from lessening their lawful rights it rather adds stability and grandeur to them." Christianity is the mother of good citizens. "There was once a time when the philosophy of the Gospel governed States." Then civilization, truth, knowledge prevailed.

"Truly the same excellent state of things would have continued if the agreement of the two powers had continued, and greater things might have been expected if man had submitted with more faith and more perseverance to the authority and the counsels of the Church."

The Reformation, however, was a great bar in the way of that happy issue. That "dreadful and deplorable zeal for Revolution which was aroused in the 16th century" is the source from which come "those recent propositions of unbridled liberty . . . . . and thence came the principles and foundations of a new law, unknown before, and out of harmony not only with Christian, but with natural right . . . . . in which way a State is nothing more than a multitude—the mistress and governor of itself." These principles are particularly unfavourable to "the Church." "The Catholic Religion no longer holds the first rank in the State, but is made equal to other religious societies." Natural reason itself "convinces us that such opinions about the ruling of a State are very widely removed from the truth." Without religion there can be no well regulated State. "The Church of Christ is the true teacher of virtue and guardian of morals; it is she who keeps great principles in safety and supplies men with effectual motives for right living." The Roman Pontiffs were alive to these principles on which alone both Church and State can prosper—as, *e.g.*, Gregory xvi. in his Encyclical of August 15th 1832, and in a later day also Pius ix. who in weighty words inveighed against the doctrines "that in Divine worship no choice should be made; that it was right for individuals to judge religion according to their personal preferences; that each man's conscience was to himself his sole sufficient guide; and that it was lawful to promulgate whatsoever each man might think and so make a revolution in the State."

The letter, which is characterised by the *Bombay Catholic Examiner*

as "that luminous and most eloquent document," concludes with a word of counsel to Catholics in regard to the part they should take in public affairs.

SCIENCE JOTTINGS.

The scientific committee appointed by the Spanish Government to examine Dr. Ferran's method of treating cholera by inoculation has reported strongly against the system. They hold that the inoculation is by no means inoffensive, that the attenuation of the cholera bacillus has not been demonstrated, that the epidemic is propagated by the vaccination and that the results, as seen by the commission, do not prove that it provides immunity from cholera. Dr. E. Klein writing in *Nature* of October 29th gives strong reasons for accepting the view of the commission as correct. He points out that Dr. Ferran has shown lamentable ignorance of the methods to be employed in the study and cultivation of bacilli and that the fluid which he used varied greatly in its microscopic character. Neither does he hesitate to endorse the statement made by the *Times* correspondent that the very favourable statistics compiled by Dr. Ferran to support his claim were shamefully "cooked." A very suspicious feature of the case is that a fee of from 5 to 12 francs was charged for each inoculation and that Dr. Ferran by this means made a large sum of money.

The committee of Physicians appointed by the India office to consider the report made by Klein and Gibbes on their investigations upon cholera have sent in their report. This report as summarized by *Nature* is to the effect that :—

"Though comma-shaped organisms are ordinarily present in the dejections of cholera patients, they are not found in the blood or in any of the tissues, even when these are examined in a recent condition ; that comma-shaped organisms of closely allied morphological appearance are ordinarily present in different parts of the alimentary canal in health and can be developed there to an unusual extent in diseases characterised by higher-secretion of the intestines ; and that there is no evidence to show that the comma-shaped bacilli found in cholera induce that disease in lower animals or in man."

Hence we are no nearer an explanation of the true cause of cholera than we were before Koch's investigations began.

Prof. Pasteur has recently communicated to the Paris Academy of Medicine a full acount of his method of treatment for hydrophobia. His earlier experiments on dogs were highly successful and now he has been able to experiment on three persons who had been bitten by mad dogs and whose cases were considered as hopeless by medical men. One of these cases was that of a boy who had been bitten no less than fourteen

times by a dog which was undoubtedly mad. When the treatment began he had been bitten 60 hours, but Prof. Pasteur took his case in hand and treated him by inoculation with the spinal cord of rabbits that had died of hydrophobia. At the time when the case was last reported on the boy was in perfect health; and as 100 days had elapsed since he was bitten there was every reason to believe that the cure was complete. The chief difficulty in carrying out the method of treatment seems to be that it is necessary to keep a number of rabbits inoculated with the disease always ready for use.

Several papers including the *Spectator*, which is probably led astray by its somewhat violent antivivisectionist views, have fallen into a serious error regarding the value of the experiments made on the persons who had been bitten by mad dogs. They point out that many persons so bitten do not get hydrophobia, and that there is no certainty that the patients treated by Prof. Pasteur would have got it. Very true, but if the writers had read the published accounts of the treatment they would have learned that that is a point of comparatively little importance. The method of treatment consists in inoculating the patient first with a very attenuated virus and then with successively stronger portions, until finally a virus is used which would produce death in a few days if the previous inoculations had been ineffectual. That the patients withstood this last inoculation was in itself a proof that they were protected.

Professor Loomis has recently published a revised edition of his *Contributions to Meteorology* on the subject of cyclones. The term cyclone, it must be remembered, is used here not in the restricted sense in which it is popularly used in India but as denoting a definite area of low pressure. These areas are not usually circular for actual measurements of those recorded in the Weather Maps of the Signal Service during a period of three years give the average ratio of the longest diameter to the shortest as 1·94. The longest diameter may be turned in any direction but in the United States it most frequently points N. 36°E. and the direction over the Atlantic is almost exactly the same.

The cyclones occurring in tropical regions are often much more violent than any that occur in middle latitudes but their size is usually much less. Over the Atlantic, for instance, the diameter of a cyclone is frequently 2,000 miles and depressions with a diameter of even 6,000 miles are by no means unknown. Tropical cyclones vary from about 100 miles to 1,000 miles in diameter. A natural consequence of this difference is that the winds in a tropical cyclone show a much more marked indraught to the centre than is the case with the Atlantic cyclones.

Another point of difference is to be found in the rate of progress of the centres. In Asiatic cyclones the average rate is only about 8 miles an hour, while West Indian ones move onwards nearly twice as fast. Again Asiatic cyclones come round to a due North course about Lat. 19°.8 N. while the West Indian cyclones reach nearly Lat. 30° N. before their course becomes due north. The average rate of progress of the United States cyclones, as calculated from the storms occurring in the last thirteen years, is 28·4 miles per hour. In Europe during the five years ending in 1880 the average rate of progress was only 16·7 miles per hour. These great differences have not yet been satisfactorily explained and there is ample room for a much fuller investigation of the whole subject than has yet been made.

The following table shows the mean Meteorological conditions of several stations in different parts of India for the month of January, and may be useful for comparing with the daily returns. We propose to give similar tables month by month.

Station.	At 10 A. M.			Resultant wind direction of the month and percentage of prevalence.	Wind velocity of the month. Miles per hour.	Rainfall of the month. Inches.
	Barometer. Inches.	Thermometer. F°	Humidity. Percentage of Saturation.			
Delhi	30·133	60·0	56	38 N. 77° W.	3·0	0·79
Allahabad	·131	63·4	60	20 N. 34° W.	1·7	0·76
Silchar	·109	65·1	77	27 S. 29° E.	2·0	0·61
Darjeeling	23·005	43·0	73	?	?	0·72
Dacca	30·085	70·6	65	32 N. 52° W.	2·1	0·29
Calcutta	·116	67·8	66	38 N. 38° W.	2·9	0·57
Nagpore	·105	72·3	45	30 N. 72° E.	2·9	0·63
Indore	·103	71·3	30	11 N. 62° E.	2·3	0·40
Jeypore	·160	66·6	51	18 N. 9° W.	3·8	0·23
Kurrachee	·127	69·1	50	26 N. 50° E.	9·5	0·58
Bombay	·056	75·9	63	56 N. 12° W.	10·1	0·11
Poona	·085	74·7	36	24 S. 63° E.	5·7	0·24
Belgaum	·062	74·9	39	50 S. 71° E.	3·9	0·07
Secunderabad ...	·114	73·6	49	71 S. 89° E.	3·7	0·29
Vizagapatam ...	·093	76·3	63	42 S. 60° E.	1·9	0·41
Bellary	·076	77·1	47	72 S. 67° E.	3·3	0·16
Madras	·074	80·4	62	76 N. 48° E.	6·3	0·97
Salem	·092	79·4	59	58 N. 88° E.	5·5	0·36
Wellington	24·300	61·3	58	67 S. 2° W.	?	0·92
Coimbatore	30·072	75·6	60	78 N. 74° E.	3·2	0·29
Trichinopoly	·070	79·4	62	78 N. 45° E.	4·8	1·07
Negapatam	·051	79·2	70	90 N. 47° E.	5·6	1·17
Cochin	·015	82·9	59	24 S. 6° E.	?	0·99
Mercara	·033	66·3	67	76 N. 78° W.	5·3	0·32
Bangalore	·069	70·1	56	82 N. 89° W.	3·6	0·22
Colombo	29·982	80·2	75	55 N. 3° W.	7·7	3·17
Rangoon	30·068	78·3	63	37 N. 16° W.	4·4	0·18

Note.—The barometer readings are reduced to 32° F. and, except for Darjeeling and Wellington, are all reduced to sea level.

The West Indian cyclones, or Hurricanes as they are called, differ in several important respects from the Asiatic cyclones. Thus we find that of the former 88 per cent. occur in August, September and October, while in the latter 52 per cent. occur in September, October and November, and 43 per cent in April, May and June. These numbers it may be said are derived from the International weather charts and do not agree with those given by Mr. Eliot for the five years 1877-81. His paper, however, deals only with those occurring in the Bay of Bengal for which the numbers were May 5, June 4, July 5, August 11, September 8, October 6, November 6, December 1, a total of 46.

Professor Huxley has been granted a pension of £300 per annum from the Civil List Fund in recognition of his eminent scientific services. He is succeded in the Chair of the Royal Society by Professor G. G. Stokes perhaps the most distinguished Physicist of the day, combining as he does an intimate acquaintance with experimental science with great mathematical power. Professor Stokes by his genial and kindly disposition no less than by his great talent is eminently fitted for the post which is the highest that can be offered to a man of science.

In his parting address Professor Huxley gave the usual sketch of the business affairs of the Royal Society during the past year. After a short reference to some of the deceased Fellows, he touched on the question of the mode of election of new Fellows. Referring to some of the criticisms recently made he deprecated any fundamental change on a method which had been found to work well for the last thirty years. Minor questions, he said, such as the number to be elected year by year, might very well be raised, but he did not think that the system of selection by the council could well be improved. The present strength of the society is 49 foreign members, 5 Royal personages and 466 ordinary Fellows. There were twenty deaths in the home list during the year and sixteen new Fellows were elected.

The President of the Royal Society is *ex-officio* Chairman of the Board of Visitors of the Royal Observatory and so Professor Huxley was able to announce that the Board had resolved, at a recent meeting, to recommend the adoption of a day commencing at midnight, in all observatories and in the *Nautical Almanac*, from and after the commencement of the year 1891. This we suppose means that after the experience of the past year, the Greenwich observers have found that the practical difficulties in the way of making the change are not so serious as to counterbalance the undoubted advantages.

The address concluded with a retrospect of the advance made by science during the last sixty years. Touching on a few of the more salient

points in each branch of science Professor Huxley showed how enormous was the progress made in all, progress so rapid that it was impossible for any man to keep pace with the advance of the whole of even one important branch of science. The danger is great that the man of science will become more and more a narrow specialist who knows only a small part of the subject in which he is himself working. "The only defence," he said, "against this tendency to the degeneration of scientific workers, lies in the organisation and extension of scientific education, in such a manner as to secure breadth of culture without superficiality; and on the other hand, depth and precision of knowledge without narrowness."

Accounts of the meteor shower of November 27 are now to hand from all parts of Europe and show that the shower was a remarkably fine one. The radiant point was close to Gamma Andromedæ and there cannot be the least doubt that the meteors were those travelling in the orbit of Biela's comet. The shower having been predicted in one of the Dunecht circulars a large number of observers were on the look out for it and, though the sky was more or less cloudy in many parts of England and the continent, a number of good observations were made. A few advanced members of the group were seen on the night of the 26th and the most rapid fall seems to have taken place shortly after 6-30 P. M. G. M. T. when the rate was about one per second. It must be remembered that, unlike the Leonids, these Andromedes are moving in the same direction as the earth and hence the velocity is comparatively small,—about eleven miles per second.

C. M. S.

RECENT PERIODICAL LITERATURE.

The December number of *The Nineteenth Century* opens with Professor Huxley's reply to Mr. Gladstone's article on the "Dawn of Creation and of Worship." His excuse for entering upon the controversy is, Professor Huxley says, two-fold. First that though he considers M. Réville wholly in the right he doubts if he, as a foreigner, has much chance of making the truth prevail with Englishmen against such an opponent as Mr. Gladstone; and secondly because the controversy involves important questions in natural science, respecting which neither of the combatants professes to speak as an expert. One of Mr. Gladstone's contentions was that "there is a grand fourfold division, set forth in an orderly succession of times as follows:—on the fifth day, 1. The water population; 2. The air population; and on the sixth day, 3. The land-population of animals; 4. The land-population consummated in man. Now this four-fold order is understood to have been so affirmed in our time by natural science, that it may be taken as a demonstrated conclusion and established fact."

The latter part of this statement Professor Huxley meets with a direct negative. "If I know anything at all" he writes "about the results of the natural science of our time it is 'a demonstrated conclusion and established fact' that the 'fourfold order'

given by Mr. Gladstone is not that in which the evidence at our disposal tends to show that the water, air, and land-populations of the globe have made their appearance." Geological evidence gives a different sequence.

"The water-population of vertebrated animals first appears in the upper Silurian. Therefore, if we found ourselves on vertebrated animals and take 'fowl' to mean birds only, or, at most, flying vertebrates, natural science says that the order of succession was water, land, and air-population, not—as Mr. Gladstone, founding himself on Genesis, says—water, air, land-population,

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Suppose however that 'fowl' is to be taken to include flying insects. In that case, the first appearance of an air-population must be shifted back for long ages, recent discoveries having shown that they occur in rocks of Silurian age. Hence there might still have been hope for the fourfold order were it not that the fates unkindly determined that scorpions—'creeping things that creep on the earth' *par excellence*—turned up in Silurian strata, nearly at the same time."

Another point on which he criticises Mr. Gladstone is his speaking of the air-population as forming a term in the order of progression from lower to higher, from simple to complex :—

"But it is not true that the air-population as a whole, is 'lower' or less 'complex' than the land-population. On the contrary every beginner in the study of animal morphology is aware that the organisation of a bat, of a bird, or of a pterodactyle, presupposes that of a terrestrial quadruped; and that it is intelligible only as an extreme modification of the organisation of a terrestrial mammal or reptile. In the same way, winged insects (if they are to be counted among the 'air-population')—presuppose insects which were wingless, and, therefore, as 'creeping things' were part of the land-population."

To those who still wish to try and reconcile a literal interpretation of Genesis with Science the only resource left, he says, is an appeal,—perfectly legitimate,—to our ignorance, and to affirm that the creative work took place in the Cambrian or Laurentian epoch in exactly the manner in which Mr. Gladstone claims it did, and then science is not in a position either to confirm or to deny the statement. Few we fancy would care to fall back on this last resource, and, after all, what is to be gained by such controversies? Nothing, certainly, by religion. Many, at least, will agree with much of what Professor Huxley says in conclusion :—

"The antagonism between science and religion, about which we hear so much, appears to me to be purely factitious—fabricated, on the one hand, by short-sighted religious people who confound a certain branch of science, theology, with religion; and, on the other, by equally short-sighted scientific people who forget that science takes for its province only that which is susceptible of clear intellectual comprehension, and that outside the boundaries of that province they must be content with imagination, with hope, and with ignorance.

It seems to me, that the moral and intellectual life of the civilised nations of Europe is the product of that interaction, sometimes in the way of antagonism, sometimes in that of profitable interchange, of the Semitic and the Aryan races, which commenced with the dawn of history, where Greek and Phœnician came in contact, and has been continued by Carthaginian and Roman, by Jew and Gentile, down to the present day. Our art (except, perhaps, music) and our science are the contributions of the Aryan; but the essence of religion is derived from the Semite. In the eighth century B.C., in the heart of a world of idolatrous polytheists, the Hebrew prophets put forth a conception of religion which appears to me to be as wonderful an inspiration of genius as the art of Pheidias or the science of Aristotle.

'And what doth the Lord require of thee, but to do justly, and to love mercy, and to walk humbly with thy God?'

If any so-called religion takes away from this great saying of Micah, I think it wantonly mutilates, while, if it adds thereto, I think it obscures, the perfect ideal of religion.

But what extent of knowledge, what acuteness of scientific criticism, can touch this, if any one possessed of knowledge or acuteness could be absurd enough to make the attempt? Will the progress of research prove that justice is worthless and mercy hateful; will it ever soften the bitter contrast between our actions and our aspirations; or show us the bounds of the universe, and bid us say, Go to, now we comprehend the infinite?

A faculty of wrath lay in those ancient Israelites, and surely the prophet's staff would have made swift acquaintance with the head of the scholar who had asked Micah whether, peradventure, th

Lord further required of him an implicit belief in the accuracy of the cosmogony of Genesis!

What we are usually pleased to call religion nowadays is, for the most part, Hellenised Judaism; and, not unfrequently, the Hellenic element carries with it a mighty remnant of old-world paganism and a great infusion of the worst and weakest products of Greek scientific speculation; while fragments of Persian and Babylonian, or rather Accadian, mythology burden the Judaic contribution to the common stock.

The antagonism of science is not to religion, but to the heathen survivals and the bad philosophy under which religion herself is often well-nigh crushed. And for my part, I trust that this antagonism will never cease; but that, to the end of time, true science will continue to fulfil one of her most beneficent functions, that of relieving men from the burden of false science which is imposed upon them in the name of religion.

This is the work that M. Réville and men such as he are doing for us; this is the work which his opponents are endeavouring, consciously or unconsciously to hinder."

The Fortnightly Review contains a very able article on "Progress in India" signed Vamadeva Shastin but written, we believe, by Sir Alfred Lyall, K. C. B., Lt. Governor of the North-Western Provinces. He writes as a Hindu "with somewhat conservative and old-fashioned Brahmanic ideas" wishing to place before the English public some expression of the perplexities and forebodings which beset him.

"Several Indian gentlemen" he says "have latterly written excellent papers in the London Reviews, that have met with a generous reception; but I think these have been mostly young men belonging to the latest school of advanced practical reformers; they have been carefully educated in England, or in Anglo-Indian Colleges, and their writings, are in the tone and upon the subjects that suit the sanguine humour of the day. They slash away in good democratic style at the Indian Government and its measures; they deal usually with such questions as the Ilbert Bill, the dis-establishment of English Chaplains in India, tenant-right, or the representation of the people. No one would be surprised if, instead of an Asiatic name, these articles bore some ordinary English signature; but although such consummate, imitation may flatter your national self-esteem, I find myself, regretfully, unable to share the gratification with which my English acquaintances discover that a young Bengalee can be trained to write almost exactly like a Londoner."

But he does not belong to this class for in spite of a good English education at Benares, where the study of Sanscrit classics still survives, he has never been able, even when he crossed the sea, to "escape beyond the deep shadow that has been cast over my ideas and feelings by the climate, the religious practices, and the philosophy of my own country." It is no use to debate, he says, whether the Eastern or the Western solution of the great problem of a future life is the most satisfactory.

"My present concern is with the immediate future, in a phenomenal sense, of that ancient and unfortunate people to whom I belong; unfortunate because with all their intellectual depth they have inherited little political capacity, and because, under the impulse and influence of what you call civilisation, they seem to be on the way towards cutting loose the mainstay and chief bond of their society, Religion. I see all round me in India signs of the disintegration of the old caste system and regulative rituals, which have grown up in this climate and country; and I can perceive that the next generation may need an entirely fresh set of authoritative rules of conduct and belief. And as I must admit that the Indian gods (in whom I have, secretly, no great confidence) do not seem to be coming forward with any new revelation for our guidance, I have been looking, as we Asiaties are apt to do, for assistance to the English Government and the English nation. I have heard, moreover, that your people are not unacquainted with similar difficulties connected with a perceptible decline of religious belief. And, therefore, since I reached England, I have been glancing over the latest books and articles on ethical questions, in the hope, now that the lights of Asia are burning low, of gaining something by the exchange of old lamps for new.

I have not as yet found much solace from considering the ways of your government in India. In Asia no serious person expects much from rulers, especially in the way of moral instruction or example: Yet, considering that it is the English administration of India which has turned all our religious ideas upside down, and remembering that spiritual anarchy is of serious concern to any government, I am inclined to doubt whe-

ther your official views and proceedings, are quite up to the level of your own situation. The Indian Office periodically issues a Blue Book purporting to describe the moral and material progress of India under British rule. Material progress is easily demonstrated: there can be no doubt, that trade is flourishing, cultivation extending, and that all the industrial pursuits have increased and multiplied, while we have been taught many things that our fathers never knew."

He doubts whether, according to Blue Book classification, the words moral and material are not coming to have the same meaning. Under the influence of public instruction the people are rapidly parting with their religious beliefs and it seems not unnatural that they should look to the authors of their material improvement for some help in re-adjusting their moral ideas upon a new foundation. The Hindus "have never constructed any positive dogmatic creeds or commandments for general use" but "have been groping about for ages to ascertain by experience what is the will of the gods and the government; just as your government now goes about hazily seeking to discover what suits the people." The author next contrasts the religious beliefs of the East and the West showing how much the former is in need of some Supreme Moral Ruler, and expresses the hope that "some distinct belief and sure hope in a future existence will develope out of our ancient idea of the purifying transmigration of souls."

"This is the situation that fills me with apprehensions. I fear that, whatever may be the new form of religion worked out of their old materials by the coming generation of Hindus, it must at best represent a political constitution of which only the theory is settled while the functions and mechanism of practical every-day administration are ill-defined. The divine executive will be weak, because it will stand, like the deity of our modern Brahmanism, upon an abstract principle, a mere notion of the divine nature, not upon some right or authority palpably exercised in this world or another. It may be right for Europe to insist upon the vast importance of separating spiritual from temporal jurisdiction; but in Asia we find that, when divine interference in the visible world ceases, the spiritual sanction loses its popular authority. And, therefore, I think it on the whole unfortunate for my countrymen at large that they have never attained the imperial conception of a paramount, omnipotent, actively governing power, like the commanding personalities of Christianity and Islam."

Speaking next of the influence of religious ideas on the character, as shown by the contrast between Hindus and Muhammedans he dwells at some length on the incident at the opening of the *Bhagavatgita* where Arjuna and his charioteer discuss the philosophy of life and death as they enter the battlefied, as illustrating the ideas and conceptions upon which the Hindu people have been mentally nourished for centuries.

"Upon such a people comes a wide and rapid flood of national and intellectual change. The whole accumulated results of the experiences and researches of Europe are thrown at the Hindu's feet; the complete apparatus of modern civilisation is placed at his disposal; he is summoned to join a citizenship which he has not inherited, neither has he obtained it by a great sum. His consent has not been asked; he has simply been included within the dominion of a busy, roving, casteless nation, with ideas and habits totally incongruous to his own. And now that you English are taking possession of the country spiritually as well as materially, now that you are destroying our temples more effictively than ever did the Moghuls, the point that interests us is whether you will be able to help us to build again, whether you will put an end to the spiritual anarchy that is coming, as you have pacified India politically. I see that our popular beliefs are losing their credibility, and that even the *Bhagavatgita* may hardly comfort us much longer; but after some examination of your literature, sacred and profane, I am inclined to conclude, regretfully, that the one commodity we shall never be persuaded to import from Europe is a Religion."

The article throughout is most thoughtful and deserves a careful study, but our space will only permit us to give two more short quotations.

"Lastly; while the somewhat arrogant materialism of Europe is exploding unpopular superstitions, a bigoted Hindu might observe with some excusable satisfaction that the subtle opiate of Indian pessimism is operating upon the energy, if not the vitality, of the great European religions. You are blowing up

the external fabric of Brahmanism; but we are aiding, I fear, to sap the foundations of Christianity. I regret this sincerely, for Christianity, whatever may be its philosophic basis, does at least come armed with an imperative mandate that is totally wanting in Brahmanism. 'Vengeance is mine, saith the Lord, and I will repay it'—is just the kind of bold authoritative declaration that I wish the fine-drawing Hindu brain could ever be got to accept without argument or analysis."

"I attach no importance to such vagaries as those of the Theosophists; though you will have noticed how a slight dabbling in the occult practices of Indian Jogees has turned a few honest English proselytes into poor demented gentlemen. Nevertheless, the incident is signficant; and I am afraid that if you Europeans ever take seriously to importing from India our religious phantasies and patterns, you will find yourselves well requited, in the sphere of morals, for any material mischief you may have done us by your exportation to India of aniline dyes, cheap cotton goods, and other deleterious articles of your insatiable commerce. I can only hope that the exchange of our spiritual products for your material manufactures may not be a kind of free trade that augurs no great advantage to the future development of either nation."

Not the least interesting of the contributions to the current number of the *Contemporary* is Dr. Fairbairn's reply to Cardinal Newman in the discussion of the relations of Reason and Religion at present being carried on in that Review. The opening paragraph is an eloquent and generous estimate of the influence in Theology and in religious life which for well-nigh half a century has been exercised by the Cardinal who "lives in our imagination as the last of the Fathers and of the Saints." Dr. Fairbairn shows that he enters the lists against his venerable opponent with real pain. "But I have no choice," he writes, "the issue is too vital to allow me to be silent."

"Frankly, then, and at the outset, the sum of the matter may be stated thus: Cardinal Newman has done two things—he has repudiated and denounced what my criticism never affirmed, and he has contributed new material illustrative of the very thesis it maintained. He has represented me as describing him as a hidden sceptic." After saying that it was metaphysical or philosophical scepticism with which he really charged him, he goes on to define the scepticism to which that refers.

"Scepticism in philosophy means a system which affirms, either, subjectively, the impotence of the reason for the discovery of truth, or, objectively, the inaccessibility of truth to the reason; and such a scepticism while it logically involves the completest negation of knowledge, has before now been made the basis of a pseudo-supernaturalism, or plea for an infallible authority that must reveal and authenticate truth if truth is ever to become or remain man's."

Proof is then led, at some length, to show that this statement or criticism of Dr. Newman's position is well founded, being confirmed and illustrated by his latest utterances, and identical with his earliest writings on the matter. An examination of his doctrine of the Reason, first in its intrinsic and next in what Dr. Fairbairn names its biographical significance, is made with some thoroughness, after which it is considered in its dialectic or apologetic. Here he meets the criticisms of both Dr. Newman and Dr. Barry on his interpretation of the *Grammar of Assent*, and examines the position of Newman, that Reason is but an instrument, a faculty of reasoning, trustworthy in particular acts, but not trustworthy throughout.

"Now, it were a curious point to determine how trust of a particular act is possible without trust of the faculty which performs it. If we know a given act to be true, we must have a standard of truth; it is through the truthfulness of the faculty that we know the falsity or truth of its particular acts." In reference to the attaining of the idea of God, Dr. Fairbairn points out the dualism that runs through the philosophy of Dr. Newman, expressed in the distinctions between "notional and real apprehension," "notional and real assent," and between "inference and assent." The Reason which is to be trusted only in "particular acts" can never get to God—this alone is arrived at through the conscience. "As it is, religion never gets inside the reason, nor the reason inside religion. They are formally related never really or vitally

connected . . . . (But) if reason plays no part in the genesis of the idea of God, it can play no part in its proof; this position involves the converse; the idea of God and the proofs of His existence can never be real possessions of the reason . . . . . . The philosophy that so construes the reason as to involve these consequences is sceptical; and this is the philosophy of the 'Grammar of Assent.'"

The latter part of the article where he has escaped from "the ungracious work of analysis and criticism to freer and nobler fields of discussion," is an attempt to answer the difficulties raised by Dr. Barry in his article, and is occupied with the two points (1) The relation of the Church or Churches to religion, and (2) of authority to religion and to reason. As to the Church, the difference between him and Dr. Barry is radical. The latter identifies religion and the Church; Dr. Fairbairn makes his position clear by a contrast between the idea of the kingdom which Christ founded and the Churches which His Apostles planted. "The kingdom was the religion, but the Churches the method of its realisation."

As to authority and religion Dr. Barry's position is, "there is no argument against an infallible Church which may not be directly turned against a visible Christ." Dr. Fairbairn refuses to accept the initial assumption in this argument, that the two authorities are in nature and quality identical and equivalent, and shews that they are mutually exclusive.

"The most conclusive argument against an infallible Church is a sovereign Christ."

The closing paragraphs of the Article, in which he deals with certain criticisms of Cardinal Newman that might well provoke or even justify a severe reply, are worthy of the scholar and the man who wrote them.

QUERIES.

A Lover of Truth.

May I ask you kindly to give briefly the opinions held on the following subjects;—

(1) *The existence of matter and of power.*
(2) *The source of motion.*
(3) *The beginning of life.*
(4) *The manifest proofs of design in nature.*
(5) *The origin of simple perception.*
(6) *Logical thinking and the origin of language.*
(7) *Free Will.*

(1) (*a*) All admit the existence of matter in some sense, but the senses in which its existence is admitted are very various, One view is that matter is fundamentally nothing but sensation. A material object is simply a group of sensations some of which are actual and others merely potential or existing only in idea. If it be objected to this view that sensations must exist in a mind and that body exists in space, it is replied that space is itself sensation—another kind of sensation, *viz.* the sensation of non-resistance. This is the view of *Idealism.* Another view is that matter is not sensation, but something altogether different, having an objective existence of its own. Of this view there are more than one form. There is the form of it called *Hypothetical Realism* which holds that what we perceive is only our sensations, but that behind our sensations, so to speak, there is something which we do not and cannot perceive but whose existence we infer as the objective cause of our sensations. Another form of it is what is known as *Natural Realism.* Natural Realism holds that matter not only really exists but is directly and immediately perceived by us. The properties *extension, form, resistance, &c.*, are not sensations in us but modes of the existence of matter. To sum up: according to Idealism, matter is a fiction; according to Hypothetical

Realism it is a hypothesis; according to Natural Realism it is a certainty.

(*b*) As to the existence of Power: one view of power is that it is merely a fiction of the mind. This was Hume's view. According to him, all that experience gives us is changes in things and the laws or uniformities according to which these changes take place. Anything more than this is mere imagination. For example, I see a person strike a ball with a club. The ball flies through the air, alights on a pane of glass and smashes it to pieces. Here we have a succession of changes, that is movements; but nothing more. If we think of a power or energy as being exerted in each antecedent change and producing the succeeding change, we are forming an idea to which there is nothing corresponding in fact. According to this view the universe is simply a succession of phenomena, and nothing more. Another view of power is that it is not a mere fiction of the mind, but something real. As the authors of *The Unseen Universe* say, "it has an objective although not a substantial existence." That is, it is not a substance, but something that is embodied in a substance. Physical power or energy is embodied in matter and manifests itself in motion. We have no direct perception of the power, as we have of the changes produced by it; but it would be a sheer abnegation of reason, it seems to us, to deny its existence on that account. To do so would be equivalent to affirming that changes can happen without a cause.

(2) *The source of motion.*

A *force* is defined as that which produces, or tends to produce, a change in a body as regards its state of rest or motion. From this it logically follows that whatever produces motion is a force. But probably our correspondent refers to the ultimate source of motion. Well, one view is that matter and motion are eternal. This was the view of the ancient 'atomic philosophers,' as *e.g.* Democritus. They held that the invisible atoms, of which visible and tangible bodies are aggregations, were eternal and eternally in motion. This motion was supposed to be due to their weight; or it may be that their weight was simply another name for this inherent motion. Further the atoms were supposed capable of having their motions altered by impact with one another. To these inherent properties of the atoms all visible movements were supposed to be somehow traceable. On this theory it is plain that no answer can be given to the question as to the ultimate source of motion, for motion had no beginning.

By those on the other hand who hold that matter (and therefore motion, has had an origin in time, we do not see what other view can be held than that the ultimate source of motion is the will of the Creator. When He created matter at first, whatever we may suppose to have been its original structure, He endowed it with its various properties, active and passive. One of these is mobility; another is gravitation; a third is the capability of receiving motion and imparting motion to matter by impact. In virtue of these properties matter must have been in motion from the first moment of its existence; and as these properties were bestowed upon matter by the Creator, He is the ultimate source of motion. We have spoken of inanimate matter; but not otherwise is it the case with animate matter. Besides these properties, animate bodies have another, *viz*, the power of spontaneous movement, which appears in its highest form in the voluntary and purposive movements of human beings. Our volition is the cause of these voluntary movements. But as our will was bestowed upon us by our Creator, He may be said to be the ultimate source of such movements. Thus it is true as the apostle has said, that "In Him we live and move and have our being."

(3) *The origin of life.*

One view is that life that begins at all begins from antecedent life. *Omne vivum ex vivo* is the motto of this school. Others hold that when life first appeared in our world it began from the not living; and that such a transition may take place even now, although we have no evidence whatever of its doing so. It is found that wherever life exists it is associated with a certain form of matter, called *protoplasm* by Von Mohl and Huxley and *Bioplasm* by Dr. Beale. The latter's description of it is as follows

"Man and animals and all their tissues and organs result from series of changes which commence in a portion of matter too minute to be weighed, which is invariably perfectly colourless and which appears perfectly structureless. Even if the particle of bioplasm be magnified five thousand diameters, not the faintest indication of fibres or particles exhibiting any special arrangement—in fact not a trace of anything like structure—can be discerned. The speck of living matter, however, absorbs certain substances, increases by assimilating matter it selects and changes it into matter like itself. Thus it gradually grows and when it has attained a certain size, perhaps 1/2000 of an inch in diameter, it divides; or small portions are detached from it, each of which grows like the primary particle and in the same way gives origin to successors from which tissues are at length produced. It is in this way that form and structure result. Form and structure result from the death of bioplasm, and no matter that is living possesses either." Now what we have to state here is that while the chemist may analyse bioplasm and find out exactly the elements of which it is composed and while he may recombine these elements in their proper proportions, he is totally unable to produce a particle of living bioplasm. No one has ever yet succeeded in getting living bioplasm except from living bioplasm. The hypothesis of *abiogenesis* has been put to the test and in the language of Virchow it is "utterly discredited." Whatever, therefore, it is, it is not science to say as Huxley does: "If it were given me to look beyond the abyss of geologically recorded time, I should expect to be a witness of the evolution of living protoplasm from not living matter." Nor does Herbert Spencer speak more to the purpose when he says: "The chasm between the inorganic and the organic is being filled up. On the one hand, some four or five thousand compounds, once regarded as exclusively organic, have now been produced artifically from inorganic matter. On the other hand, the microscope has traced down organism to simpler and simpler forms, until in the *Protogenes* of Professor Haeckel there has been reached a type distinguishable from a fragment of albumen only by its finely granular character." What Spencer here calls a filling up of the gap seems to us to be as nearly as possible a crucial proof of the impossibility of its ever being filled up. If organism can be produced without life, what other conclusion can we come to than that life is something over and above organism? and it seems very like a *reductio ad absurdum* of the physical theory of life to tell us that the microscope has reduced the difference between living and not living matter to one of more or less fine granulation!

(4) *The manifest proofs of design in nature.*

All admit the existence of design in human beings, *i.e.* the intentional adaptation of means to ends. But be it remembered that no one has any direct perception of design except in himself. Each one is concious to himself of acting with design, but he can only *infer* design on the part of his fellowmen. Now, how is it that we distinguish a designed from an undesigned action on the part of our fellowmen? Well, suppose that in going along the street of a town I observe a person following me at a no very great distance, that would suggest no idea of design on his part. But suppose that, when I turn down another street, and another and yet another, I find that I am still followed through all my labyrinthine wanderings and that when I slacken or quicken my pace or stop, the person does the same, the only conclusion I could come to would be that I was being followed with some design or other. Again suppose you had been invisibly present in Robinson Crusoe's island and had seen him one morning cut a notch in a post with his knife, you would probably not have supposed he had any design in doing so. People often do things like that from mere spontaneity and lack of anything better to do. But suppose you had seen him morning after morning cut a notch, and every seventh morning cut one double the usual length, you would certainly have concluded that the notches were means to some end. Once more, suppose a pack of cards are lying scattered on a table and some one carelessly draws them into a heap and throws them into a box, you would assume that if the

person, had any design at all it was simply to free the table from its litter. But suppose he picks up the cards and piles them on one another one by one, first all those of the same suit, then all those of another, taking them also in a certain order, say from the highest to the lowest, you would inevitably conclude that he had a design in thus arranging them, probably to ascertain whether the pack was complete.

Now what is it that is common to all the above-mentioned activities that suggest design and that is absent from all those that make no such suggestion? Well, in each of them there are order, uniformity and combination of separate causes towards a single effect, which effect explains and justifies them. We know that these are characteristic of design as we are concious of it in ourselves and by analogy we associate them with design in others. Now apply this to nature. Take as an illustration the human eye. Here we have a great number of separate parts—sclerotic, choroid, retina, cornea, iris, aqueous humour, chrystaline lens, vitreous humour, cilliary processes, cilliary muscle, the four straight and two oblique muscles, &c., &c. Each of these parts has a separate function and by virtue of it contributes towards the outcome of the whole, namely *vision;* and none of them could be spared without impairing that result. By analogy, therefore, we infer that all these separate parts, with their characteristic structures and functions, were designed to produce vision. They are means adapted to that end. That end is the final cause, or designed effect.

Of course there are those who demur to all this and who contend that in the above and in all other so-called proofs of design there is only a fortuitous combination of *efficient* causes and that no such thing as *final* cause exists. All we can say is that we cannot believe it. We could as soon, it seems to us, attribute the collection of an army of 50,000 men, with its various divisions, accoutrement and arms, with its order of arrangement, its complexity and harmony of movement, with its unity of action, and magnitude of achievement, to chance, as we could attribute the human eye to chance.

Are we then, it will be asked, to regard nature as governed partly by chance and partly by design? By no means. We have mentioned the human eye as one of those cases where a combination of many causes to produce a single effect irresistably suggests design. But we are far from denying, indeed we unhesitatingly affirm, that design as really exists everywhere else in nature, although it may not be so obviously suggested. We hold that, wherever we see the uniform operation of law, there design is traceable. Now this is characteristic of universal nature. Nature is wholly a cosmos and in no part a chaos.

[Answers to the last three of these queries are postponed for want of space.—EDITOR *M. C. C. Magazine.*]

CORRESPONDENCE.

TO THE EDITOR,

Christian College Magazine.

SIR,

The relevancy of the enclosed communication may not at first sight be apparent, but, on consideration, will be found to touch not only the weak spot in Mussalman and Hindoo Students' spiritual status but also (Alas !) in a rapidly increasing section of Christians (?) in England. It was in connection with a discussion with a friend, of this bent of mind, that the enclosed letter was written, and I have now to beg that you will kindly insert the same in the next issue of your College Magazine.

Yours faithfully,

J. MCKENZIE.

NADUVATAM,
NEILGHERRY HILLS,
October 30th 1885.

MY DEAR MR. * * * *

We have aired our views regarding Jacob and other personages, but the main point which, before all else, it behoves us to decide, is to answer the all important query: "What think ye of Christ?" For Christ is the pivot—the axis round which all other personages, and all else, revolves. You may, perhaps, reply (as so many at the present day *do* reply) "It is not essential or even possible, that I should decide as to the exact personal identity of Christ. Enough for me that I find His Life, as given in the Bible, to be the most perfect on record and, for that reason alone, the most worthy of my study and imitation." Now I submit that such a position—on such grounds—is utterly untenable. Any thinking man of a similar persuasion, is fully entitled to turn round on you with the retort, "What! Do you hold up to me as an example worthy of imitation, the life of a man who was a glaring impostor—a blasphemer who made himself equal with God?" And then, alas! at the spectacle of such a hideous, unimaginable montrosity as perfection of life conjoined with blasphemous imposition, that man must inevitably (by the force of sheer revulsion) be driven into the blackness of darkness of wrecked faith in goodness and truth! "But," you may reply, "we are not obliged to take up such an extreme view. Christ was probably a very well-meaning, but self deceived, enthusiast who over-shot the mark." Then let us look at Christ's life in the light of a self-deceived enthusiast. To those who have made themselves familiar with the life-histories of the numerous zealots who have, at various eras of the world, appeared on life's scene, it will be unnecessary to point out the peculiar idiosyncrasy common to all of this class, namely a striking lack of discrimination and judgment in the practical emergencies of common daily life. In Christ's life, however, we see such an extraordinary example of clear, practical wisdom as the world never beheld. The combined wisdom and subtlety of the learned Sadducees and Pharisees, ever laid in wait to catch at any hasty, unpractical expression such as a self-deceived zealot, carried away on the torrent of enthusiasm, must inevitably have given utterance to at some time or other. The replies given by Christ to the cunningly worded test questions put to Him, were marked by such extraordinary discrimination and wisdom as to utterly confound His astute antagonists and to draw from the multitudes the confession that "never man spake like this man." There is not a single trait in Christ's whole deportment which denotes the blind, self-deceived enthusiast, for in those very points in which, as such, we should logically expect to find Him weakest, it is there that we find Him strongest. That view of Christ must therefore be abandoned. The only alternative left is that Christ was a wilful, knowing impostor and hence that the most magnificent "grapes" of purity and wisdom were gathered from a "thorn." Men may even bring themselves to believe the possibility of this although scouting the very idea of a mere material miracle. Was Christ an impostor or a misguided enthusiast? If we fail to prove Him either, then there is nothing left but to accept Him on His own profession as the Eternal Son of God the Father, who came from God and went to God. Conceding this we must logically concede all else and accept implicitly the whole range of Christ's teaching, which (on examination) will be found to embrace both Old and New Testament. The beautiful moral maxims of Christ are inextricably interwoven with his spiritual doctrines, and therefore both must stand or fall together. Is it a small thing that hundreds of years previously Isaiah should have prophesied that He who should come would be a "stumbling-block" to many who found it impossible to reconcile perfection of life and wisdom with, what appeared to their minds to be, claims amounting to blasphemous imposition? "What think *ye* of Christ?"

J. J. McKENZIE.

NEILGHERRIES,

October 28th, 1885.